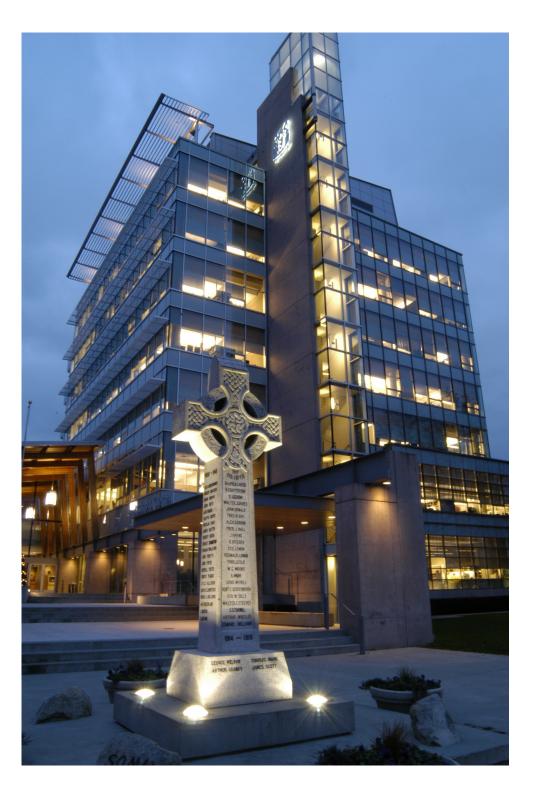
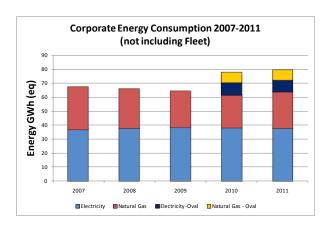
## Energy Update Report

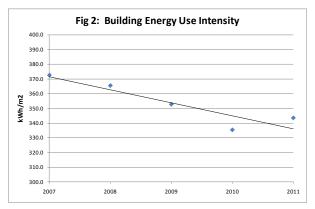
Summary 2011/2012





- Cost of energy in 2011 for the City of Richmond buildings, lighting, water and wastewater services was approximately \$5.4 million dollars or 79.3 GWh (equal to average energy use of 2300 homes in BC annually).
- As compared with 2010, energy consumption for these civic assets increased by approximately 1.7 GWh. This was mainly due to a colder winter in 2011 that increased corporate natural gas usage.
- Although overall energy use for the organization has increased since 2007, due to new civic infrastructure (such as the RIchmond Olympic Oval), our building energy use intensity (kWh/m2) has decreased since then, indicating increasing corporate energy use efficiency.







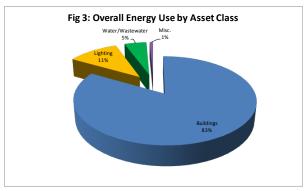


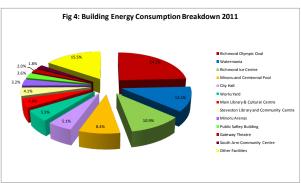




- In 2011, the majority of corporate energy use was by buildings-83%, followed by lighting-11% and water/ wastewater services-5%.
- Of the ~120 civic facilities under City stewardship, energy use in 2011 at only 12 facilities accounted for ~85% of the overall civic building energy use, with our recreational facilities being the largest consumers.
- Recreational pools and ice arenas were our highest energy consuming facilities - with Richmond Olympic Oval, Watermania, Richmond Ice Centre, Minoru Pools and Minoru Arenas accounting for approximately 57% of the energy used by civic buildings in 2011.
- This focus of energy usage on a smaller number of buildings has lead the Energy Management Program to focus its assessment and auditing resources on the higher consuming buildings.
- Five high energy consuming buildings are participating in a BC Hydro continuous optimization (COp) program, which involves a detailed site investigation and will implement measures to increase energy efficiency by between 5-20%.











- Secured over \$200,000 of external funding to support the Energy Management Program.
- The City of Richmond was again recognized by BC
  Hydro as being a Power Smart Leader remaining
  the only municipality in BC to achieve this high level
  of recognition for the City's energy efficiency and
  conservation work.
- City is on course to achieving an estimated 1.9 GWh reduction in electrical and natural gas use and approximately 200 tonnes of greenhouse gas emissions from a variety of projects to be completed by early 2013. This equals approximately \$110,000 operational cost avoidance savings.
- This energy reduction represents approximately 2% of our current corporate annual energy use and the GHG emissions reduction is equal to removing approximately 50 vehicles from Richmond roads each year.
- Continued delivering corporate energy awareness program (Year 2), with support of BC Hydro, to promote energy conservation measures. Some from the past year's initiatives included a conservation commitment campaign, Aquatics and Fire Hall energy reduction challenges, and A/C awareness "Beat the Heat" Hawaiian shirt day.













- One LEED certifiable Gold building renovation was completed for RCMP headquarters use – Community Safety Building.
- Energy saving measures that were part of the renovation included, new high efficient heat pumps and windows, new insulation and windows, solar thermal panels for domestic hot water heating, and new lighting controls.
- The Alexandra District Energy Utility was officially opened in September 2012, with Phase 1 and 2 connections all in place and operating. The system provides geothermal renewable energy to heat and cool the residential units in the new West Cambie neighbourhood.
- Installation of sanitary sewer heat recovery system is underway to provide supplemental heating at Gateway Theatre, which will displace natural gas usage at the facility by ~900GJ and reduce carbon emissions by ~47 tonnes = to 12 vehicles off the road in Richmond each year.
- Pilot testing of light emitting diode (LED) lighting at the Burkeville tennis courts, with the goal looking at installing LED lights at other sports locations.
- Engineering tested 11 different types of LED street light fixtures. One of the 11 fixtures will be used for a new installation at Westminster Hwy. The LED lighting will be used instead of the conventional higher energy using high pressure sodium fixtures.















## **Energy Management Program**

- Continue to implement and work towards the Sustainability Framework goals, specifically the Sustainable Resource Use and Climate Prepared City Strategic Programs.
- Complete the establishment of both corporate and new facility specific energy and GHG emissions reduction targets, including the updating of the High Performance Building Policy.
- Continue to increase energy use awareness within the organization and community.

## **Action Items include:**

- Continue to deliver information, through presentations and reports, to appropriate city staff and stakeholders concerning civic energy use, to inform and empower.
- Continue to facilitate energy reduction projects through the BC Hydro Power Smart Program and complete the BC Hydro Continuous Optimization program underway at five civic facilities.
- Complete the upgrading of our corporate energy use database, to improve energy reporting capabilities and corporate energy use information sharing.
- Set corporate building energy use targets, to help drive energy efficiency goals within the corporation.
- Complete Year 3 of the workplace conservation awareness program, which focuses on increasing staff energy use awareness and positively influencing energy related work behaviours.
- Continue development of an energy auditing and study schedule for our civic facilities.

## Corportate Sustainability Framework

