

Climate Change

The earth's atmosphere contains gases that act as an insulating blanket by trapping heat from the sun. These gases are known as 'greenhouse gases' (GHGs) and include water vapour, carbon dioxide, methane, nitrous oxide and halocarbons, with carbon dioxide being the most significant.

Over the past 100 years the earth has warmed, on average, by 0.6°C. The southern interior of BC has experienced an increase of 1.1°C during this time period (MWLAP, 2002a). Practices that burn fossil fuels, such as motor vehicle operation, heating residential and commercial buildings, and industrial operations, impact air quality and release additional greenhouse gases into the atmosphere. The global warming trend may be partially attributed to geologic cycles, where the earth experiences oscillating warming and cooling periods. However, scientists are concerned that human activities are accelerating the rate of warming.

Warmer temperatures will disrupt the present hydrologic cycle by diminishing snow packs and glaciers, promoting earlier spring runoff and increasing weather variability. As a result, landscape alterations, such as increased erosion of watersheds, will create challenging conditions for aquatic and terrestrial life. Warmer temperatures also provide a favourable habitat for many insect populations, which raise concerns regarding insect-related disease. An increase in human respiratory illness is also expected due to greater presence of pollen and moulds. These influences will not only impact humans and the environment, but will be reflected in the economy as well (MWLAP, 2002).

Fossil fuel burning is the primary human activity that is contributing to increased greenhouse gases. Automobile emissions are the number one source of greenhouse gases in BC, representing 42% of total provincial greenhouse gas emissions (MWLAP, 2002). Vehicle emissions and natural gas burning have been identified as the two most concerning GHG emissions in the Central Okanagan (Federation of Municipalities, 2003).

What are we doing?

To urge and support the acceleration of a Clean Air Action Plan, the municipal council of the City of Kelowna endorsed the Kyoto Protocol in March of 2002 and adopted the resolution provided by the Federation of Canadian Municipalities in September 2002. The resolution recognizes that polluting activities are affecting climate change and threatening citizens' health and quality of life and that education, proactive pollution reduction and research actions are needed to decrease greenhouse gas emissions.

To facilitate greenhouse gas reduction, the City of Kelowna and the Central Okanagan Regional District joined the Partners for Climate Protection Program (PCP) in 2001. This program supports Canadian municipal governments in preparing and implementing local climate change action. The PCP is a partnership between the Federation of Canadian Municipalities and the

International Council for Local Environmental Issues (ICLEI). The initiative of the program is to reduce greenhouse gas emissions from municipal operations by twenty percent and at least six percent (the Kyoto target) within the community as a whole, preferably within ten years.

Members of the PCP Program are encouraged to:

- Develop and finalize a local action plan that aims to initially reduce emissions and energy use in municipal operations and then expand to reduce emissions in the community. This local action plan will also incorporate public awareness and education campaigns.
- Begin implementation of the local action plan.

The City of Kelowna and the Central Okanagan Regional District are currently working towards completing the goals of the PCP program. To date, a baseline inventory of greenhouse gas emissions has been completed for City and Regional District operations as well as for the Regional District of Central Okanagan community, which provides targeting and tracking mechanisms for greenhouse gas reduction measures.

The City of Kelowna has also developed a "Sustainable Building Action Plan" for its operations to provide consistent policy for designing, constructing, and operating buildings in a manner that incorporates energy efficiency, water conservation, waste minimization, pollution prevention and resource efficient materials in all phases of a building's life.

Reducing greenhouse gas emissions is not only good for the environment; it can also save money on energy costs. Retrofitting buildings, improving street lighting, and using efficient vehicles for fleets, for example, can save thousands of dollars in energy costs every year. The payback period on capital investments to improve energy efficiency is often short and the savings can be reinvested in the community.

To take advantage of these cost savings, the City of Kelowna formed the Energy Management Committee (EMC) in 1995. The purpose of the Energy Management Committee was to provide a more unified approach to energy management in the areas of electrical, water, sewer and civic building operations. West Kootenay Power, at that time, also requested representation on the committee to ensure that all reduction opportunities identified were assessed on the basis of "best value for money spent" and to ensure energy reduction rebates were provided, where applicable. Since 1995, a number of energy reduction initiatives have been identified and implemented within the electrical, water, sewer and civic building operating areas. These initiatives are saving the City of Kelowna more than 3.75 million kW hours of electricity annually, reducing energy costs by \$168,000 per year, in cooperation with FortisBC and its PowerSense program.

Improvements have been made to more than 80 city-owned facilities ranging from the Parkinson Recreation Centre and Memorial Arena to water and sewage treatment facilities. Signal lights have been replaced at 70 intersections with light emitting diodes providing a 90% savings in electricity. In addition new and

retrofitted buildings take advantage of state-of-the-art energy efficient technology whenever practical.

Sustainable Buildings

The City has become increasingly aware of the importance of sustainable building efforts in the overall scheme of environmental stewardship. The relationship between energy conservation and green house gas (GHG) reduction is a major issue. Air quality improvement through energy conservation is high on the priority list for residents, health care professionals and air quality specialists. In Kelowna and the Regional District of Central Okanagan, there is a strong interest to improve air quality and enhance energy and water conservation.

In 2004 the City became involved in the Community Action on Energy Efficiency (CAEE) program and is currently involved in a Sustainable Building Pilot Project sponsored by Natural Resources Canada and the BC Ministry of Energy and Mines.

Going Green

As part of this project we've heard loud and clear that the City needs to send a "Green Message" out to the community and it needs to be done now. The message not only needs to be about buildings but it needs to encompass all sectors (government, transportation, environment, planning and utilities).

On April 20, 2005 Council adopted four action items and a strategy of accomplishment as outlined below:

1. *Provide Lean Green City Government*
2. *Promote Active Transportation*
3. *Encourage Environmental Practices*
4. *Create Healthy Urban Centres*

1. Lean & Green City Government

City government will lead by example with practices that save money and improve the health of people and the environment.

Strategy:

- Improve air quality and reduce greenhouse gas emissions by producing clean energy and using green vehicles
- Design and build City facilities that are economical and healthier for people and the environment
- Reduce City use of water, energy and other resources
- Switch to products that protect employee and community health and the environment
- Reduce City use of pesticides to a minimum in parks and on roads

2. Active Transportation

Kelowna will continue to take steps to improve by promoting transportation choices (transit, bicycles, walking) that make our city more liveable and preserve green space.

Strategy:

- Support Public Transit
- Make Kelowna the most bike and pedestrian friendly city in the Okanagan
- Promote clean fuels and clean vehicles
- Build more sidewalks to connect communities, enhance public safety and encourage more walking

3. Environmental Practices

We will encourage businesses, residents and others to use resources more efficiently and to adopt environmentally responsible practices.

Strategy:

- Reduce, Reuse, Recycle at home and at work
- Conserve the city's water and energy resources
- Foster environmental awareness by providing programs and services that serve Kelowna's diverse populations

4. Healthy Urban Centres

We will improve Kelowna's quality of life, protect and restore the environment and enhance neighbourhood liveability.

Strategy:

- Preserve and increase Kelowna's green spaces
- Enhance the water quality of Okanagan Lake and urban creeks
- Improve air quality and look for local solutions to global warming
- Promote sustainable healthy urban development that reduces environmental impacts on land, air and water

Commitment

The City of Kelowna has been committed to energy management since 1995 when the Energy Management Committee was formed to identify and implement ways to save money and conserve energy in civic facilities.

Goals

The Committee has four primary objectives:

1. To promote the wise use of energy within municipal operating areas by providing department managers with information about available rebates and opportunities for reduced operating costs
2. To prepare action plans for opportunities that demonstrate potential for capital cost savings and reduced operating costs through energy reduction, and to bring these forward for review as part of the budget process
3. To use the money saved through energy rebates to pay for facility audits that will identify further energy-saving opportunities and cost savings
4. To ensure all initiatives identified and undertaken are consistent with rebate opportunities and provide value-for-money.