

# Memo



**Date:** December 9, 2009  
**File:** 0610-51  
**To:** City Manager  
**From:** Manager, Strategic Projects  
**Subject:** Corporate Carbon Inventory and Green Municipal Fund Application

---

## **Recommendation:**

THAT COUNCIL receives the Corporate Carbon Inventory and GMF Application report dated December 9, 2009 from the Manager, Strategic Projects as information;

AND THAT Council endorses the Federation of Canadian Municipalities Green Municipal Fund (GMF) application for funding for the corporate and community carbon planning;

AND THAT Council directs staff to return with the final corporate GHG reduction plans prior to the 2011 budget process.

## **Background:**

On September 21, 2007 the City of Kelowna signed the BC Climate Action Charter. This committed the City Corporation to reach carbon neutrality by 2012 in its corporate operations. Carbon neutrality is defined as reaching the GHG emission levels, measured in absolute rather than per capita terms, which it emitted in the 2007 base year. The expectation is that the Corporation would then go on to a 33% reduction by 2020 and an 80% reduction by 2050, again in absolute terms. This is particularly challenging for a growing City operation. Increases in conventional infrastructure using fossil fuels (buildings, vehicle and equipment fleet, etc.) and that are needed to service growth increase our GHG emissions. On the other hand, growth provides the resources and opportunities to replace inefficient infrastructure and make efficiency gains that mitigate the impacts of increasing infrastructure.

The Climate Action Charter also commits the City as a whole community to take voluntary actions to reduce City-wide GHG emissions and to report on its success. Corporate operations do, however, impact the community's ability to make City-wide GHG reductions. The City can influence an estimated 50% reduction in the Community GHG footprint even though the Corporation produces only 1% of Kelowna's GHG emissions.

Hyla Consultants has completed GHG inventories for over 100 BC communities and has also been retained to help determine Kelowna's carbon footprint. The task is not complete, but will include 2007 base year figures and subsequent year of corporate GHG emission production to establish trend lines and inform reduction strategies. Figures 1 and 2 provide a graphic illustration of the 2008 corporate GHG emissions profile. Some preliminary observations can be made:

1. The Corporation produces about 1% of Kelowna's total GHG emissions (8,000 of 800,000 tonnes/year).
2. Whereas the largest producer of community GHG is the transportation sector (57%), the largest producer of carbon in the City Corporation is buildings at 44%.

A handwritten signature in the bottom right corner of the page.

3. About 54% of corporate energy is provided by fossil fuel sources (natural gas, gasoline, diesel), and the remainder comes from electricity. GHG emissions are derived primarily from fossil fuel consumption.

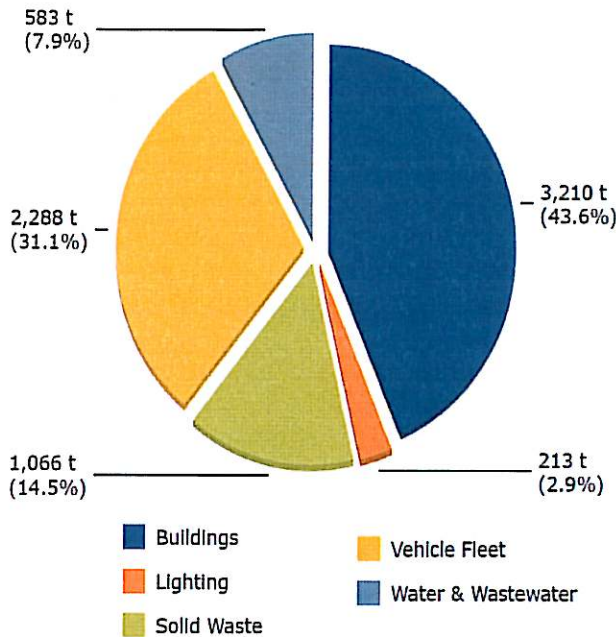


Figure 1: GHG emissions by sector

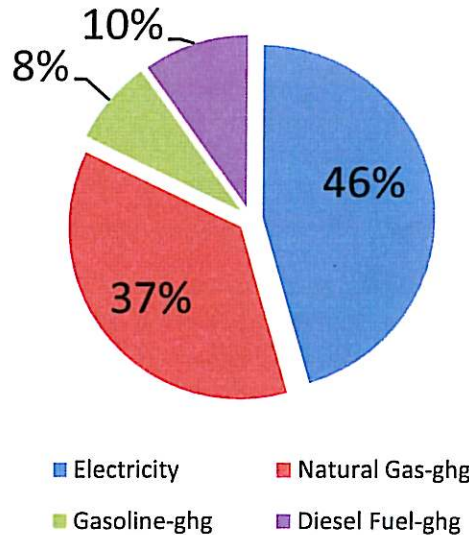


Figure 2: Corporate Operations Energy by Source

Since the 2007 base year, the City's carbon footprint has grown through the addition of the H2O Adventure and Fitness Centre (750 tonnes), expansions at the Cedar Creek water treatment plant and the Waste Water Treatment Plant, and the additions of operational equipment such as trucks and mowers. The H2O centre energy saving technologies reduced its GHG emissions by 800 tonnes, but overall the facility still created a net increase in carbon emissions.

Carbon reductions since 2007 have been achieved through the various actions:

- building retrofits and improving operational procedures in all infrastructure systems has reduced natural gas consumption,
- the expansion of the organics composting has diverted methane gas,
- the replacement of economy vehicles with Smart cars and hybrids has increased fuel efficiency, and
- the increasingly productive harvest of land fill gas at the land-fill site and its conversion to electricity has further reduced GHG emissions.

In that trees sequester carbon, there has been some success in replacing pine beetle kill with new trees, but it is expected that die-off will exceed replanting efforts over the short term. Many of these GHG emission savings have been financed by the energy consumption savings and utility provider rebates rewarding reduced energy consumption. It is suspected, however, that our overall operations have seen a net increase in GHG emissions since 2007.

Given a track-record of innovation, the Corporation has the capacity to implement strategies for carbon neutrality by 2012, but it will take concerted and immediate action. The Federation of Canadian Municipalities (FCM) GMF program funds up to 50% of a GHG reduction plan that combines City Corporate operations and community GHG emissions. There are four steps:

1. The City submits an "intent to apply"; this has been done and a notice to proceed is expected shortly

2. The city provides a detailed application with a draft plan of action; this is required within 20 days of the notice to proceed
3. The FCM approves the application; this is expected by the end of March 2010; a grant of about \$65,000 is anticipated
4. The City is expected to provide a detailed plan of action for City operations by mid-summer 2010 and a detailed plan of action for the community following public consultation. A consultant would be commissioned to complete the draft and final plans. Note that the City must proceed with the planning and action to meet its Charter commitments, whether or not the FCM application is successful.

The following are generic action strategies, drawn from the Climate Action toolkits and the existing carbon plans of other BC jurisdictions that need to be systematically tested in specific City operations to significantly reduce GHG emissions.

1. **Carbon awareness:** real time data collection systems for GHG emissions to inform plans, stimulate altered behavior and recognize successful strategies and behaviours, public workshops to engage citizens in solutions and behavior change
2. **Carbon reduction planning:** infrastructure system audits, option feasibility studies for GHG reductions throughout the infrastructure life cycle with better cost-benefit metrics and achievable targets
3. **Green Buildings:** High energy performance, low carbon footprint, low hot-water consumption
4. **Green Fleet:** alternative fuel vehicles including electrical, GPS tracking, anti-idling procedures and bylaws
5. **Green Power:** District energy systems, the replacement of fossil fuels with renewable energy sources, distributed energy, smart metering
6. **Green Infrastructure:** LED-solar street lighting, improved maintenance and operational procedures and controls
7. **Creative Carbon reduction financing strategies:** grants, revolving loans, utility partnerships
8. **Green Procurement policies and contract requirements:** low carbon operations including hired equipment, low carbon freight requirements, low-carbon product specifications
9. **Green Legislation:** carbon neutral development permit areas, district energy local service area bylaws, Bill 27 policy and bylaw tools
10. **Land use planning:** compact-livable mixed-use communities to reduce need for commuting and vehicular travel; since this strategy depends on redevelopment and market conditions it is, therefore, a long-term solution that must begin early to have any impact
11. **Alternative transportation networks:** public transit, bike and pedestrian network connectivity and intra-modal exchange
12. **Waste reduction:** organics diversion for carbon offsets, land fill gas to energy for electricity or fuel and GHG diversion

Further immediate GHG reductions are foreseen for 2010 including:

- Family “Y” pool; a solar thermal installation for water/space heating, higher efficiency boilers and heat recovery dehumidification
- Bike-pedestrian multi-modal corridors: Cawston extension of Rails with Trails, Abbott Street expansion, Lakeshore Road from Gyro to Cook Road, Houghton in Rutland, and the connection of Rails with Trails to the PRC will increase the viability of walking and biking
- Expansion of the biosolid composting plant (Ogogrow production facility)

#### **Internal Circulation:**

Director Policy and Planning

#### **Legal/statutory Authority:**

The Climate Action Charter is a voluntary commitment. Bill 27 provided green communities amendments to local government statutes allowing local governments to make bylaws to conserve energy and water and reduce greenhouse gas emissions through various strategies.

#### **Financial/Budgetary Considerations:**

The 2010 budget submission includes a request to commence work on GHG reduction action planning and implementation. The detailed plan of action for GHG reductions will have significant cost implications to be addressed in future budget submissions.

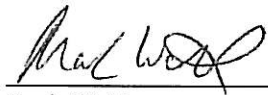
**Personnel Implications:**

The Corporation will be required to systematically and comprehensively address the GHG reduction strategies that without adding new staff, will require that lesser priorities be set aside.

**Considerations not applicable to this report:**

Existing Policy;  
Technical Requirements;  
Legal/statutory Procedural Requirements;  
External Agency/Public Comments;  
Communications Considerations;  
Alternate Recommendation;

Submitted by:



Mark Watt  
Manager, Strategic Projects

Approved for inclusion:  R.Cleveland, Director, Infrastructure Planning

CC: Director, Policy and Planning  
Director, Real Estate & Building Services  
Director, Civic Operations  
Director, Design & Construction Services  
Director, Corporate Services