

## APPENDIX 17

### SUSTAINABILITY AND ENVIRONMENTAL LEGISLATIONS

The CRD is reviewing the integration of goals and objectives from the following climate change and sustainability legislation for inclusion in the Program.

### B.C.'s Climate Action Plan

Phase One of this plan was released on June 26, 2008. It outlines a set of comprehensive strategies and initiatives to reduce GHGs. The plan is based upon four key pillars:

- Firm targets for reducing GHGs.
- Policy measures to reduce carbon emissions including a revenue-neutral carbon tax, participating in regional cap-and-trade systems, emission standards on vehicles, landfill gas emission standards, fuel standards, and green community development.
- Strategies to assist BC communities adapt to the effects of climate change.
- Education and public awareness programs.

Specific components of the Climate Action Plan being reviewed for use by CRD during Program implementation as well as the CRD's broader resource management plans include:

- **Carbon Neutrality.** CRD is committed to the principle of carbon neutrality. Details on GHG legislation and CRD plans are below.
- **Green Building Code.** In September 2008 the government introduced new Building Code requirements to increase energy and water efficiency. Commercial buildings must meet American Society of Heating, refrigeration and Air-Conditioning Engineers 90.1 (2004) standard. ASHRAE 90.1 is an internationally recognized standard for energy efficiency in buildings.
- **Water Efficiency.** Use of low-flow toilets (6 L) and other water-saving plumbing fixtures and fittings is mandatory in BC for new construction and renovation projects. Other areas under review include greywater recycling.
- **Community Growth Plans.** New legislation requires local and regional growth plans to include GHG emission reduction targets, policies and actions. Local jurisdictions are encouraged to enable use of development cost charges to encourage more sustainable development and GHG reductions using new technologies.
- **Independent Projects.** Encouraging green developments that are self-sufficient and independent of municipal services (e.g. Dockside Green).
- **Landfill Waste Disposal.** A variety of initiatives are suggested under the Climate Action Plan including:
  - Keeping organic waste out of landfills. Using composting and diversion programs. CRD has an existing diversion program.
  - Turning Waste into Energy. Capturing methane from landfills to generate electricity (which can be sold to BC Hydro) also directly reduces GHGs. Hartland Landfill has been successfully implementing this program for several years and has won awards for its initiatives.
  - Composting. Using organic wastes for energy generation or composting by households.
  - Packaging Controls and Source Reduction. Working with manufacturers to use more responsible packaging and other wastes created by their products, CRD has also recently implemented an e-waste program.
  - BC Bioenergy Programs. The Climate Action Plan supports biofuel production using wastes as a way to also offset GHG production.

Appendix A of the Climate Action Plan includes a number of specific measurable targets that may be relevant to the implementation of the Program. CRD has identified the following specific items for consideration in overall community planning:

- Interim GHG targets in 2012 and 2016.
- New cars purchased may be hybrids.
- New Green Cities Project will foster innovations that reduce BC's imprint on the planet through sustainable community planning.
- Province will work with the CRD and Union of BC Municipalities and the private sector to develop new incentives to encourage smaller lot sizes and smaller, more energy efficient homes that use less land, less energy, less water, and are less expensive to own.

### **Greenhouse Gas Emissions and Carbon Neutrality**

CRD is developing a GHG management strategy and is committed to the principle of achieving carbon neutrality. The Integrated Resource Management Strategy identified a number of areas where GHG impacts of the Program are significant and should be managed. These include:

- Biosolids management and organic residuals energy recovery. There is a significant amount of energy contained in sludges and organic wastes from the solid waste stream. Such energy is often captured in the form of methane from anaerobic treatment of biosolids. Capturing such energy could off-set the use of other fossil-fuel based carbon sources (e.g. natural gas).
- Heat recovery from wastewater is another area of interest with an impact on the GHG strategy. Again, such heat generation could be used to offset fossil-fuel based carbon energy sources. The challenge for CRD is to ensure such efforts are feasible in moderately warm climate like the Victoria area.

The Province passed Bill 44 – *2007 Greenhouse Gas Reductions Target Act* in November 2007 and it came into effect January 1, 2008. Bill 44 – 2007 is the first of its kind in any North American jurisdiction to target greenhouse gas emissions in large public sector organizations. It requires Provincial school districts, colleges, universities, health authorities, government ministries, agencies and Crown corporations to be carbon neutral by 2010. By 2020, GHGs in such public sector organizations must be at least 33 per cent below 2007 levels, and 80% below 2007 levels by 2050. The Bill 44 – 2007 definition of carbon neutrality captures two key themes: (i) minimizing GHG emissions, and (ii) reducing net GHG emissions through emission offsets.

Bill 44 – 2007 does not presently contain GHG emission reduction targets for local governments outside of the Provincial government.

The Province has also tabled Bill 31 – *2008 Greenhouse Gas Reduction (Emissions Standards) Statutes Amendment Act*, 2008. This legislation, if and when enacted, would give the Province the means to develop regulations that could include specific reduction targets for GHG emissions from waste management facilities that could include wastewater management systems.

The Province has issued a *Landfill Gas Regulation Policy Intentions Paper for Consultation* (May 2008) that focuses on GHG emissions from landfill operations, where this regulation is intended to come into effect in 2009. However, nothing similar for wastewater systems has been proposed by the Province at this time.

### Local Communities Climate Action Charter

CRD has signed the Local Communities Climate Action Charter which pledges communities to:

- become carbon neutral,
- measure and report on their community's greenhouse gas emissions profile, and
- work to create compact, more energy-efficient communities.

### Living Water Smart Plan

*Living Water Smart* is the Provincial government's vision and plan to manage natural water resources over the long-term. The plan draws on a variety of policy 'tools' including planning, regulatory change, education, and economic incentives.

The following goals from the BC Living Water Smart plans are under review by CRD.

### Doing Business Differently

Criteria	Usage by CRD in Program
1. By 2012, all land and water managers will know what makes a stream healthy, and therefore be able to help land and water users factor in new approaches to securing stream health and the full range of stream benefits.	CRD has ongoing educational projects for staff and public. Ongoing. No specific measurement criteria to be used in Program.
2. By 2012, water laws will improve the protection of ecological values, provide for more community involvement, and provide incentives to be water efficient.	Under review.
3. Government will require all users to cut back their water use in times of drought or where stream health is threatened.	CRD is already a leader in such initiatives.  This criteria will not be used by CRD for Program evaluation.
4. Government will support communities to do watershed management planning in priority areas.	Under review.
5. By 2020, water use in British Columbia will be 33 percent more efficient.	This is an important goal for the Province and is under review for implementation by CRD.

### Preparing Communities for Change

Criteria	Usage by CRD in Program
6. By 2012 new approaches to water management will address the impacts from a changing water cycle, increased drought risk and other impacts on	CRD is already implementing such planning.

water caused by climate change.	
7. Government will work with other provinces to share ideas and resources to improve water conservation and collectively help communities adapt to climate change.	The CRD is planning to establish an educational centre to share lessons learned in the Program.
8. Community development strategies will be developed to recognize the importance of riparian zones (interface between land and stream) in adapting to climate change.	Under review. CRD has already identified marine shoreline issues that must be managed at Macaulay Point.
9. Adapting to climate change and reducing our impact on the environment will be a condition for receiving provincial infrastructure funding.	CRD is committed to the principle of carbon neutrality.
10. Green developments waiting for provincial environmental approvals will be fast-tracked and given priority.	This issue is generally under the control of the CRD's client municipalities.
11. Government will develop new protocols for capital planning that will look at the lifecycle costs and benefits of buildings, goods and services.	CRD is using a lifecycle cost analysis in the evaluation of Program options.

### Choosing to be Water Smart

Criteria	Usage by CRD in Program
12. Fifty percent of new municipal water needs will be acquired through conservation by 2020.	This is an important goal for the Province and is under review for implementation by CRD.
13. Government will look at new ways to help promising water conservation technology succeed.	CRD has been proactive in such reviews (see resource recovery discussion papers).
14. The Green Building Code will require water conservation plumbing fixtures such as low flush toilets.	CRD already implements such policies.
15. By 2010, government will mandate purple pipes in new construction for water collection and re-use.	Under review.

### B.C. Energy Plan

The BC Energy Plan is designed to make the Province energy self-sufficient by 2016 while taking into consideration the natural environment and climate impacts. It includes both conservation efforts as well as use of innovative clean energy technologies. It aims to provide BC with secure, reliable and affordable long-term energy supplies.

Appendix A of the BC Energy Plan includes a summary of 55 policy actions under consideration by the Provincial government. Most such policies are specific to senior levels of government, however the following are under review by CRD for application to the Program:

- Implementation of energy efficiency standards for new buildings by 2010.
- New provincial public sector buildings will be required to integrate environmental design to achieve the highest standards for greenhouse gas emission reductions, water conservation and other building performance results such as a certified standard.
- Increase the participation of local governments in the Community Action on Energy Efficiency Program and expand the First Nations and Remote Community Clean Energy Program.
- All new electricity generation projects will have zero net greenhouse gas emissions.
- Ensure the procurement of electricity appropriately recognizes the value of aggregated intermittent resources.
- Work with BC Hydro and parties involved to continue to improve the procurement process for electricity.

### **B.C. Bioenergy Strategy**

Bioenergy is energy derived from organic biomass sources – such as trees, agricultural crops, food processing and agricultural wastes and wastewater. As noted in the BC Bioenergy Strategy, biomass such as organic waste, wood residues and agricultural fibre is considered clean or carbon neutral when used as energy because it releases no more carbon into the atmosphere than it absorbed during its lifetime. This recognizes the carbon cycle of organic wastes, including wastewater, and differentiates fossil-fuel based carbon sources from biogenic sources. When biomass is used to replace non-renewable sources of energy, bioenergy reduces the amount of GHGs released into the atmosphere.

#### **A.1 Impact of Climate Change on Implementation Planning**

A joint Federal/Provincial (see CLIMATE 2008) estimate of sea level changes projected an increase for Victoria by 2100 of 0.20 to 0.33 metres based on mean estimates, and as much as 0.89 to 0.94 metres based on extreme high estimates of global sea levels. Furthermore, it is noted that such changes could have significant consequences where development and harbour infrastructure is close to present high tide limits (particularly during extreme weather events such as storm surges, occurring at the same time as high tides).

The CLIMATE 2007 report did identify statistically measurable increases in the overall rainfall intensity and volume (non-extreme events) and interpreted this as being a result of large scale climate change. Given the challenges CRD is facing with inflow and infiltration, such rainfall growth trends and storm water management issues must be managed.

For procurement planning purposes, CRD will manage this risk by specifying guidelines on design flow minimum requirements to ensure climate change peak flows and risks are accommodated. This issue will not be left to service providers to determine.