

Resource Management

Regional Sustainability Strategy Policy Options Series | Fall 2010

Residents and businesses want assurance that there is reliable, safe drinking water and environmentally appropriate waste water treatment and sustainable waste management. As the primary agency responsible, the CRD invests to ensure that these expectations are realized. Looking to the future, in the context of sustainability, the CRD is committed to “resource recovery”. Can this be achieved through a “business as usual approach” or can more be done to accelerate the pace of change?

The CRD and other utility providers supply infrastructure – drinking water, liquid and solid waste. Each service is framed by a complex series of regulations and laws, and the management and implementation of each service differs, delivered through a separate system with distinct issues and characteristics. The CRD is also engaged in the stewardship of agriculture and forest lands.

Overall, the CRD is committed to “integrated sustainable infrastructure systems” that provide multiple benefits for our communities. These systems protect public health, are cost-effective, use the least amount of resources, and reduce negative environmental impacts. Through exploring new approaches to infrastructure, we identify the solutions that maximize sustainability benefits, minimize investment cost and are practical to implement.

GOAL: Effective management, delivery and extension of physical and environmental services.

| Target | Status Quo | Moderate | Significant |
|---|---|---|---|
| Establish Master Implementation Agreement. | Agreed on best practices, policies, procedures, benchmarks and targets consistent with the intent of the Regional Growth Strategy and principles of sustainability. | CRD and municipalities include policies in official community plans that support service extensions based on fiscal/ technical analysis of supporting growth. | Develop comprehensive management plan for extension of services with legislated authority to enable options and strategies. |

**The Significant Change approach builds upon and enhances the options presented under Moderate Change. The effect is often cumulative, with policies under Moderate Change generally assumed to be included under Significant Change.*

Water Conservation

CRD Integrated Water Services serves 340,000 consumers. Water is sourced from the Sooke Reservoir, a protected watershed that is owned by the CRD. Samples are collected daily, and laboratories run tests for bacteria and algae concentrations, pH, turbidity and conductivity.

As of 2008, the CRD's total water consumption was 400 litres per capita per day (lpcd) – 280 lpcd for residential use and 120 lpcd for institutional, commercial and industrial uses. Compared to overall consumption in BC (689 lpcd), the region is more water efficient. However, the region's residential use is considerably higher than the average in other provinces and it is about double that of many Western European countries (typically 140-170 lpcd).

What's Driving Involvement?

Health Canada Guidelines for Canadian Drinking Water Quality, first issued in 1968, are updated regularly.

BC legislation and regulations set out stringent requirements that must be adhered to:

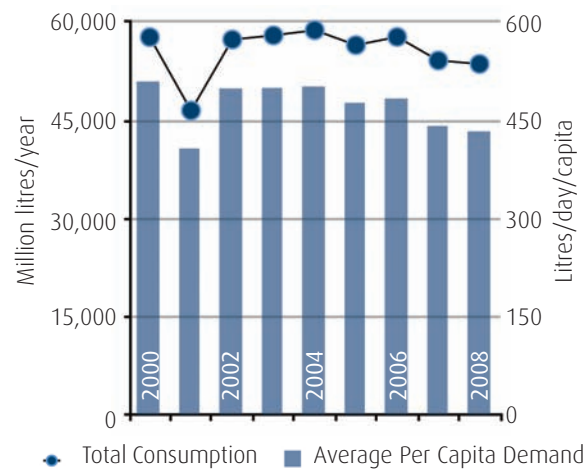
- BC Drinking Water Protection Act (2001) sets out protections for water supply and systems.
- BC Drinking Water Protection Regulation (2003) provides details on standards, monitoring, permits and public notice

– Capital Region Water Supply and Sooke Hills Protection Act (1997) and accompanying regulation.

The CRD promotes water efficiency through a suite of programs comprising: engineering & system operation procedures, financial incentives, legislation, education and social marketing.

At the CRD, there are corporate strategic directives that protect multi-use watersheds to ensure quality water and a healthy ecosystem. The CRD also complies with many United States Environmental Protection Agency regulations.

Figure 1: Water Demand, Capital Region, 2000-2008



Source: CRD Water

GOAL: Strategic Plan for Water Management

| Target | Status Quo | Moderate | Significant |
|---|--|---|--|
| <p>Minimize water consumption through ongoing sustainability and efficiency measures and application of reduce, reuse and recycle practices.</p> <p>Ensure sufficient measures are in place to protect the existing water supplies.</p> | <p>Align water service infrastructure with objectives of RSS development policies.</p> <p>Ensure water efficiency and demand management performance is considered in relation to per capita targets.</p> <p>Increase public education efforts in order to further conserve drinking water.</p> <p>Adjust pricing to accommodate a decrease in demand that would sustain existing operations.</p> | <p>Demonstrate commitment to RSS principles reflected through policy similar to Regional Context Statements adopted by municipalities in OCPs.</p> <p>Develop new incentives and rebate programs to promote water use efficiency.</p> <p>Enhanced demand management measures to achieve the goal of no expansion of water supply capacity for 50 years.</p> | <p>Permit grey water reuse and rain capture for irrigation.</p> <p>Establish updated capacity and use measures to promote water conservation and alternative system design.</p> <p>Change pricing to support desirable development patterns.</p> <p>Incorporate BC Water Smart goals to reduce the size and operating costs of water infrastructure required for growth.</p> <p>Monitor realities of block pricing structures.</p> |

Liquid Waste

The CRD’s Liquid Waste Management Plan (LWMP) for the core area and Saanich Peninsula governs how we manage our sewage. Other areas served by community sewage collection and treatment systems will also be guided by LWMPs in the future.

Many aspects of wastewater treatment benefit from new, environmentally-friendly technology and approaches. The CRD’s “resource recovery strategy” involves all aspects of wastewater treatment in chorus with urban infrastructure needs. By integrating wastewater management into sustainable water, stormwater, solid waste and energy planning, the CRD can mesh wastewater treatment with the concept of “smart” urban growth and energy recovery. A comprehensive liquid waste management plan also makes provision for onsite sewage systems, such as septic tanks, inflow and infiltration control, managing contaminants at source, biosolids processing and resource recovery.

What’s Driving Involvement?

2005 | CRD Board commissioned an independent study by the Society of Environmental Toxicology and Chemistry to review liquid waste practices in the core area. The study found that, with an increasing population, this area would soon require increased treatment.

2006 | BC Environment directs CRD to update treatment.

2009 | CRD receives \$3 million grant to recover energy from effluent from the Saanich Peninsula Wastewater Treatment Plant. The project is a district heating pilot for the region that will reduce greenhouse gas emissions.

2009 | CRD amends the core area LWMP to address infrastructure, resource recovery options, site locations, site assessments and environmental impact studies for discharge locations.

2010 | CRD amends the LWMP, revising configurations for treatment, including environmental impact studies for proposed facilities at McLoughlin Point and Hartland Landfill, and environmental impact assessment on outfall locations.



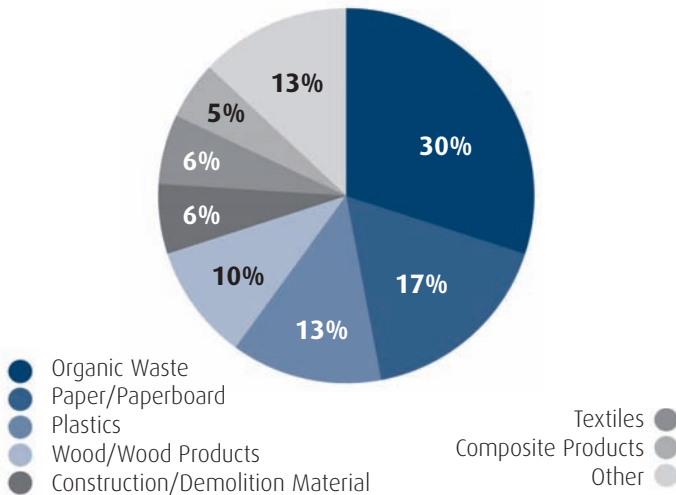
GOAL: Current Liquid Waste Management Plans

| Target | Status Quo | Moderate | Significant |
|--|---|--|--|
| Adopt liquid waste management and resource recovery plans for all communities within the Growth Management Planning Area. | Achieve goals and commitments set out in adopted LWMPs. | <p>Seek out and establish partnerships for heat recovery, district energy systems and beneficial use of biosolids to minimize greenhouse gas emissions.</p> <p>Reduce inflow and infiltration to achieve a maximum daily wet weather flow that is four times the average of dry weather flow.</p> <p>Develop sustainability objectives for each LWMP to align with regional sustainability principles.</p> | <p>Integrate community growth and development with wastewater management planning.</p> <p>Develop comprehensive inflow and infiltration management plan with regional legislated authority to enable options and strategies.</p> |

Solid Waste

The CRD's Solid Waste Management Plan (SWMP) governs how waste is managed in the region. To meet the waste diversion goals of the SWMP, residential recycling and reuse programs are in place, along with public education and engagement programs. Figure 2 shows the composition of the waste stream in 2009/10 used to target specific materials for disposal restrictions and recycling.

Figure 2: Waste Stream Composition, 2009-2010



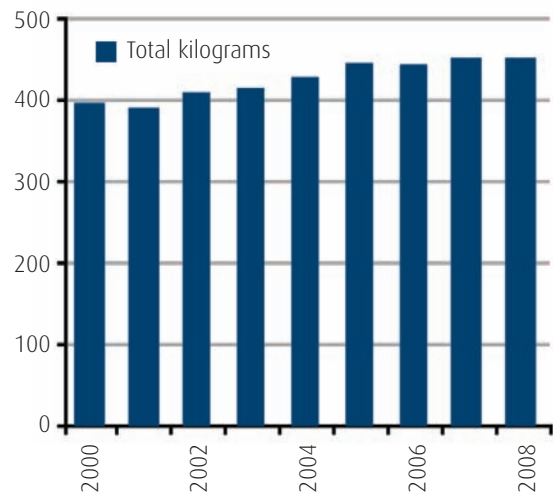
Source: CRD Waste Stream Composition Study

Population and employment growth will lead to an increase in solid waste. All disposal and diversion programs are funded through tipping fees from the Hartland landfill and the sale of recyclable materials. The recycling programs and evolving kitchen scraps program are not financially sustainable after 2013. An updated funding model that balances user tipping fees with other funding opportunities, such as property taxes are needed to achieve success.



Through established waste diversion initiatives, the curbside recycling program and numerous landfill bans, the CRD waste diversion rate sits at 39%. The CRD plans to achieve further reductions through enhanced recycling services, landfill disposal charges, an organics management program and continuing education and outreach.

Figure 3: Total Per Capita Solid Waste, 2000-2008



Source: CRD Water

GOAL: Current Solid Waste Management Plans

| Target | Status Quo | Moderate | Significant |
|---|---|--|--|
| <p>Ensure current SWMP and 10-year strategic plan are consistent with sustainability principles.</p> | <p>Review SWMP to ensure that solid waste is evaluated as a resource and valued according to sustainability principles.</p> | <p>Integrate full cost accounting and triple bottom line into evaluation of solid waste services and programs.</p> <p>Increase waste reduction/resource management programs and integrate sustainable principles.</p> <p>Integrate solid and liquid waste management plans, including all plan components.</p> | <p>Establish strategies for long term residual waste management as part of integrated environmental resource management utilizing latest recovery programs and technologies.</p> |

The CRD plans to achieve waste reduction through enhanced recycling services, landfill disposal charges, an organics compost program, and education and outreach programs.

What's Happening Regionally?

2006-2008 | CRD partners with two municipalities to conduct an organics (kitchen scraps) pilot in anticipation of restrictions at Hartland landfill.

2008 | CRD Strategic Plan for Solid Waste is adopted and establishes waste diversion goals of 60% by 2013 and 90% by 2020.

2009 | CRD applies the zero waste concept, centred around the 4Rs (reduce, reuse, recycle, recover).

2009 | CRD issues Request for Proposals for an enhanced curbside program to service residential recyclables and kitchen scraps beyond 2012.

2009 | A process of integrated resource management is initiated – a more holistic approach is expected to reveal synergies, identify new revenue streams, reduce life-cycle costs of infrastructure, lower greenhouse gas emissions and achieve other environmental benefits.

Stormwater

Stormwater discharges falls under the jurisdiction of municipal government. The CRD's Stormwater, Harbours and Watersheds Program (SHWP) works with member municipalities to develop regulatory and best practice tools. Its overall goal is to protect watercourses, municipal infrastructure, and near shore marine environments from stormwater contamination.

What's Driving Involvement?

The principal driver is source contamination and its potential risk to public health, as described in two recent investigations.

- **Saanich Peninsula.** In 2008, 100 discharges were evaluated for public health concerns by sampling for fecal coliform bacteria and rating each as high, moderate, or low level of concern. Twelve were rated high, and 30 were moderate. In 2009, the SHWP group worked with municipal staff to locate source contamination and informed property owners about measures to reduce contaminants.
- **Core Area.** Discharges with a high level of concern for public health dropped dramatically from 1993 to 1999. But, since 2001, this has increased. In 2007, 41 of 175 discharges were assessed at a high level.

Best Practice – The Hartland Landfill

The CRD has invested over \$30 million at the Hartland landfill since 1985 to create an award-winning, multi-purpose facility providing services for recycling, household hazardous waste collection, yard and garden collection, controlled waste and landfill disposal. The facility offers education and engagement opportunities (e.g. tours, interpretive centre). It also includes a landfill gas utilization facility, leachate management system and an extensive environmental monitoring program.



What's Happening Regionally?

Two best management practices, which are ready for region-wide use, are "Painting without Pollution" and "Power Washing without Pollution".

Partners and Initiatives

The Stormwater, Harbours and Watersheds Program works with several partners such as the Esquimalt Lagoon Stewardship Initiative (ELSI), Bowker Creek Initiative and the Gorge Waterway Initiative.

What's Happening Elsewhere?

Examples of best practices include rain gardens and detention ponds, often a long-term process. Capturing rainwater for toilet flushing and irrigation is being considered in new development.

Resource Needs

Agriculture

The region has approximately 10,600 hectares of agricultural land, down from 12,000 hectares when the Agricultural Land Reserve (ALR) was established in 1974. Food production and sustaining land for farm uses are ongoing regional goals. Protecting agricultural land also supports the rural landscape and values.

What's Driving Involvement?

- BC Agricultural Land Commission (ALC) Act — The purposes of the ALC are to: preserve agricultural land; encourage farming on agricultural land in collaboration with other communities of interest; and encourage local governments, first nations and other stakeholders to enable and accommodate farm use of agricultural land and uses compatible with agriculture in their plans, bylaws and policies. Land included in an ALR must remain unless excluded by the Commission.
- The CRD's Regional Growth Strategy (2003) supports agriculture.
- The CRD's Corporate Strategic Plan sets out the principle of no decrease in the percentage of ALR land.
- Member municipalities with ALR lands include policies in official community plans to protect agricultural land, sustain rural character, and support farm businesses.



Regional Context

- Between 2000 and 2005 the overall number of farms increased by 12, while the overall area farmed decreased by roughly 1000 hectares.
- Smaller farms produce more profit on a per hectare basis than larger farms.

What's Happening Elsewhere?

Strategy: Comox Valley. The strategy's goals include: preserve and enhance agriculture, retain rural character and overall ecological health, eliminate subdivision of agricultural properties, revise zoning to preserve agricultural parcels working potential; demonstrate support through infrastructure investment.

2040 | Metro Vancouver. The draft strategy sets out an Urban Containment Boundary that protects farmland and green space. Policies include supporting active and viable farming, discouraging farm fragmentation, improving the management of the urban-rural interface, improving infrastructure, promoting "buy local".

Food and Agricultural Strategic Plan | Boulder, Colorado.

This comprehensive plan is updated annually. Its goals include: increase food production; improve access to locally produced food; improve economic viability of agriculture; recognize the role of agriculture in conserving and regenerating natural resources and the environment; improve health outcomes.

Forest Management

In 2003, the BC government replaced the *Forest Land Reserve (FLR) Act* with the *Private Managed Forest Land (PMFL) Act*. Land previously protected under the FLR through tax disincentives and other policies can now be removed by the owner and sold for other purposes. Hundreds of hectares of land within the Juan de Fuca Electoral Area (EA) are now being considered for non-forest uses, challenging the assumptions inherent in the RGS Renewable Resource Lands Policy Area and zoning bylaws.



GOAL: Planning for Long Term Strategic Resource Needs

| Target | Status Quo | Moderate | Significant |
|--|---|---|--|
| <p>Support farming in the ALR and existing forestry uses.</p> <p>Buffer renewable resource lands from urban areas.</p> | <p>Adopt policies that support protection of and provide support to resource uses on resource lands.</p> <p>Forestry land decisions made by PMFL's Commission and decisions on ALR exclusions made by the Agricultural Land Commission.</p> | <p>Consider policies that restrict removal of ALR land subject to land capability criteria.</p> <p>Limit subdivision of designated forest land.</p> <p>Designate farmland protection development permit areas to ensure compatible uses and buffers surrounding farmland.</p> <p>Promote non-resource extraction, forest-based industry and forest-based agriculture.</p> | <p>Adopt policies that support retention and inclusion of other farmland within the ALR.</p> <p>Adopt policies that support the retention of working forest land within the CRD.</p> <p>Monitor the status of working forest and agricultural lands to increase awareness of resource uses.</p> <p>Discourage non-farm uses on farmland.</p> |

What Do You Think?

It is evident that an integrated approach to resource management will maximize sustainability benefits of our resource infrastructure – drinking water, liquid waste and solid waste. The CRD has been actively exploring ways to integrate the supply of infrastructure, moving away from separated distinct delivery systems to a more cohesive, coordinated approach.

- How can the CRD further enhance integration of infrastructure systems?
- What is needed to further enhance resource recovery initiatives in the region?
- Are there any best practice examples of stormwater management, agriculture and forest land protection that are well suited to our region’s climate and context?

Notes:

Feedback

The CRD values your input in developing the Regional Sustainability Strategy. Please submit your comments on this policy paper via sustainability@crd.bc.ca.

For in-depth information, **visit www.crd.bc.ca/sustainability** to view notices on upcoming consultations, discussion papers, and the overall progress of the Regional Sustainability Strategy.

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Regional Sustainability Strategy

The CRD, together with member municipalities, stakeholder groups and residents, is working to developing a vision and a planning framework to promote sustainability and create a lasting legacy for future generations. This will lead to the CRD’s first Regional Sustainability Strategy, a broadly ranging document that charts a course to a complete and inclusive community, committed to sustainable practices socially, environmentally, economically and financially.

The Strategy has its foundations in earlier commitments by the CRD Board and member municipalities through the Regional Growth Strategy, adopted in 2003.



Making a difference...together