

Taking Action on Climate:



B.C. Local Government Examples (DRAFT)

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Introduction

The Province of British Columbia (the Province, or B.C.) has been working to provide local governments with the tools and resources they need to support provincial greenhouse gas (GHG) reduction goals. With approximately 43% of GHG emissions in B.C. under the influence of local governments, they have an important role to play in GHG reduction. The Green Communities legislation (Bill 27, 2008), which amended the Local Government Act and Vancouver Charter, introduced changes that enable local governments to more effectively address climate action in their communities. Among these changes is a requirement for local governments to have targets, policies and actions to reduce GHG emissions in their Official Community Plans by May 31, 2010, and in Regional Growth Strategies, for those regional districts where this is applicable, by May, 31, 2011.

Many local governments have already begun to meet this challenge. This document is intended to inspire action by sharing that wealth of knowledge that has begun to accumulate. It is designed to help everyone – from those communities well versed in energy planning to those already taking a few tentative steps but not sure where to go next, and to those who don't know where to start. The list of local government examples is not exhaustive, but intended as a point of departure for communities honouring their commitments under the Climate Action Charter, and requirements under Bill 27, 2008. If you have a community policy, program or project related to climate action that you would like to share with us, we would like to hear from you – please contact:

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Acronym List

CAEE - Community Action on Energy Efficiency Initiative - A jointly managed Ministry of Energy Mines and Petroleum Resources and Natural Resources Canada pilot project aimed at providing financial and research support to select B.C. local governments to advance energy efficiency.

CEEI – [Community Energy and Emissions Inventory](#) – 2007 CEEI Reports are high level estimated inventories of community energy consumption and greenhouse gas emissions from on-road transportation, buildings, solid waste and land use change (deforestation at regional district scale only). Additional sectors and detail will be explored in subsequent years.

LGA – [Local Government Act](#) – This Act, and the Community Charter, provide the legal framework, powers, duties, functions and authority for local governments to take climate action. Bill 27, 2008 provisions are incorporated into the Local Government Act..

ICSP – [Smart Planning for Communities](#) – Smart Planning for Communities (formerly Integrated Community Sustainability Planning) is a collaborative initiative between the Ministry of Community Development and the Fraser Basin Council. It is aimed at assisting local and First Nations governments in addressing their long-term sustainability challenges by offering a province wide network of Sustainability Facilitators.

OCP - [Official Community Plan](#) – Under the LGA section 875, an OCP is a statement of objectives to guide decisions on planning and land use management, within the plan area, respecting the purposes of local government.

RGS - [Regional Growth Strategy](#) – Under Part 25 of the LGA, a RGS is a local government strategic plan to promote human settlement that is socially, economically and environmentally healthy and that makes efficient use of public facilities, land and other resources. An RGS gives long range planning direction for regional district and municipal [official community plans](#) (OCPs) and provides a basis for decisions regarding implementation of provincial programs in the area.

PCP - [Partners for Climate Protection](#) – A program that partners the Federation of Canadian Municipalities and Local Governments for Sustainability to offer a five milestone strategic (hyperlink here) framework for participating Canadian local governments to follow as part of their climate action commitment.

How to Use This Document

Examples of targets, policies, and actions are grouped under five distinct focus areas. Drawing from policies and actions in other communities, local governments can consider the challenges and opportunities to move forward on climate action. The first focus area explores strategic activities that can help set the foundation for and overall direction of a community's efforts in taking climate action and promoting environmental sustainability. The remaining four focus areas correspond roughly to the categories of output monitored in the Community Energy and Emissions` Inventory (CEEI), produced by the Ministry of the Environment. Making this direct linkage between the examples and the monitoring framework reflected in the CEEI will better enable local governments to reflect on relationships between their efforts and actual outcomes in their climate action work.

The five focus areas are:

1. Developing the Strategic Framework
2. Land Use and Transportation
3. Form, Function and Siting of Buildings
4. Waste and Water: 5 R's - Reduce, Reuse, Recycle, Recover and Residuals Management
5. Retaining and Enhancing the Natural Environment

Under each focus area, examples are further grouped under policy framework and other actions.

1. Developing the Strategic Framework

A strong strategic framework provides the foundation for climate action and sustainability planning. Many local governments are already marshalling needed resources (e.g. budgets, organizational structures, and staff time), and establishing a structure and plan for their climate and sustainability actions. For example, approximately one third of BC communities are part of the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) program. The steps outlined below are typically included in climate action planning frameworks such as the PCP five milestone framework and the Community Energy Association's [Community Energy and Emissions Planning Guide](#):

1. Commitment: Make a commitment to climate action and sustainability.
2. Measuring: Understand where emissions are coming from by using your existing Community Energy and Emissions Inventory (CEEI)
3. Planning: Use a range of flexible and progressive policy tools to address GHG emissions targets, policies and actions and integrate them into an OCP and RGS
4. Implementing: Put the plans and policies into action
5. Monitoring: Monitor progress and make adjustments to policy and programs accordingly

Target Examples:

- Anmore has joined the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) requiring a commitment to reduce GHG emissions community wide by 6% over ten years (1997-2008).
- Dawson Creek have committed to a GHG reduction target of 33% by 2020, and 85% by 2050.
- Colwood has committed to reducing greenhouse gas emissions by 33% by 2020 relative to 2007 levels.
- The Capital Regional District and Metro Vancouver have adopted the B.C. Government's commitment to a GHG reduction of 33% by 2020, and 80% by 2050.
- The City of North Vancouver aims to reduce GHG emission by 80% from 2007 levels by 2050, and 100% by 2107.

Strategic Framework Actions:

Commitment

- Dedicate a new position and/or division, or integrate climate action planning into an existing job function:
 - North Okanagan Regional District's Sustainability Facilitator
 - Campbell River's Sustainability Manager
 - Richmond's Sustainability Manager
 - Saanich's Climate Action Coordinator
 - Kelowna's Community Sustainability Division
 - Dawson Creek's Director of Corporate Planning and Sustainable Community Development

- Assign committees to engage in climate action planning:
 - Golden and Revelstoke have formed Air Quality committees to make OCP policy recommendations.
 - Salmon Arm has established an Environmental Management Committee.
 - Penticton has a Climate Action Charter Committee.
 - Bowen Island has a Sustainability Working Group.
 - Colwood has a Mayor’s Task Force on Energy and Climate.
 - Port Alberni struck a Climate Change Committee.

Strategic Commitment

- Sign the [BC Climate Action Charter](#) and join more than 170 BC local governments in a joint provincial-UBCM - local government commitment to reduce GHG emissions.
- Join the Federation of Canadian Municipality’s (FCM) [Partners for Climate Protection](#) program and commit to a five-milestone framework with the support of a national network of more than 100 participating local governments across Canada.
- Join the ICLEI Local Governments for Sustainability Cities for Climate Protection (CCP) and join more than 700 local governments across 11 countries

Measuring

- Understand the origin of community emissions, use or build on your CEEI data:
 - Prince George’s [Energy and Greenhouse Gas Emissions Inventory and Reduction Targets](#) report (2005) and Gibsons GHG Emissions Profile and Forecast (2008) are two examples of GHG emission inventories.

Planning and Implementing

- Develop plans that include overarching goals, strategies and actions to foster sustainable communities:
 - City of North Vancouver [Greenhouse Gas Local Action Plan](#) (2005)
 - [Whistler 20/20 Plan](#) (2005)

- Prince George [Energy and GHG Management Strategy](#) (2007)
- Esquimalt's [Sustainable Development Strategy](#) (Draft, 2007)
- Burns Lake [Community Energy Plan](#) (2008)
- District of North Vancouver has a Community Climate Change Action Plan (2009)
- Kimberley [Climate Change Adaptation Project](#) (in progress)
- Comox Valley ICSP (in progress)
- Saanich's Climate Change and Energy Action Plan (in progress)
- Integrate climate action targets, policies and actions into OCPs and or RGSs:
 - Grand Forks is preparing a [Sustainable Community Plan](#) (Draft, 2008) which is meant to look at long-term sustainable development and will be used to update the OCP.
 - Squamish's [OCP](#) (Draft, 2007) incorporated climate change impacts and GHG emissions reduction objectives.
 - Salt Spring's [OCP](#) (2008) and Denman Island's [OCP](#) (2009) have policies to ensure that land use decisions consider climate change impacts and GHG emissions reduction objectives.
- Develop educational websites and other community engagement mechanisms for residents to learn about key sustainability issues such as transportation, waste, water and community development:
 - [Sustainable Dawson Creek](#)
 - [Sustainable Kamloops](#)
 - [Sustainability: City of Vancouver](#)
 - Kaslo held an energy efficiency trade show as a pilot project under CAEE.

Monitoring

- Monitor progress using a systematic approach:
 - Whistler's [Monitoring Program](#) tracks and reports the status and progress toward the Whistler2020 Vision through Core Indicators and Strategy Indicators.
 - Saanich publishes an annual sustainable scorecard that measures sustainable indicators.
 - The Islands Trust's [Measuring Our Progress](#) program tracks a key indicator of 'rural sprawl' (kilometres of road per capita) as well as the area of land that is farmed or held for conservation.
 - The Capital Regional District released a comprehensive [RGS Monitoring Report](#) (2008) that tracks eight detailed monitoring indicators.
 - The City of North Vancouver developed the [Targets, Indicators and Monitoring Systems](#) (TIMS) initiative in 2005 to measure the progress of its OCP.
 - Metro Vancouver published a [Sustainability Report](#) (2009) that articulates indicators to track progress towards its sustainable vision.
 - Dawson Creek, as part of its Sustainable Community Planning Process, is developing indicators to monitoring progress towards its targets.

2. Land Use and Transportation

The transportation sector is one of the largest sources of community-wide GHG emissions. As transportation choices are largely shaped by land use patterns, local governments are recognizing the importance of their role in reducing GHG emissions, e.g. through building more compact, complete settlement patterns, and ensuring connectivity of pedestrian, transit and cycling networks.. Do we want some stats here on why these are important...I have some research into that...let's talk. When planning for smart communities, local governments can strive for the following objectives:

- Green settlement patterns: Compact settlement patterns that contain a mixture of uses, and that are connected by safe, convenient and pleasant low emission (pedestrian, cyclist and transit) transportation networks (including end-use facilities)
- Green transportation: Reduced vehicle travel and emission rates by encouraging increased fuel efficiency and support for low-emissions vehicle types including public transit or equivalent
- Local food supply: Viable local agricultural land base and processing facilities, including urban agricultural land, and a market for locally produced foods

Target Examples:

- The District of North Vancouver has set a target to achieve a modal share of 30% of trips for transit, walking and biking by 2020, 40% by 2031 and 55% by 2050.
- The Capital Regional District has set a target to achieve a region-wide transit share of 15% by 2026
- The Capital Regional District aims to have 90% of new dwelling units within its Regional Urban Containment area, and 15% within City of Victoria boundaries from 2006 until 2026.

Policy Framework:

The following provides examples of policies and action that are being used to support the objectives as identified by the headings below.

- **To support green settlement patterns**

- Kaslo's [OCP](#) (Draft, 2008) includes a policy to prevent the development of greenfield sites before all existing land has achieved its potential for infill
- Vernon uses a [Smart Growth Checklist](#) to be filled out for development permit applications to ensure development is consistent with the principles in their [OCP](#) (2008)
- Saanich, Nanaimo and Kelowna have implemented [Urban Containment Boundaries](#) to control sprawl and encourage development around town centres.
- Saanich's [OCP](#) (2008) focuses on centralized multi-family residential, commercial, institutional and civic development in village centres.
- Comox Valley Regional District has comprehensive recommendations for future plans contained in [Approaches to Growth Management for Sustainable Communities in the Comox Valley](#) (2008) and the [Sustainable Development Strategy for the Comox Valley](#) (2008).

Saltspring Island OCP

Saltspring Island has received a report entitled [The GHG Implications of Different Settlement Patterns](#) (2007) to support decision making for its OCP review and has included a number of policies in its updated [OCP](#) (2008) that support green settlement patterns in a rural environment. These include:

-village containment boundaries around rural villages and policies that support compact, mixed use, pedestrian friendly villages

-policies that support clustering of existing development potential and reduce rural sprawl by redirecting future development from 'density-sending areas' to 'density-receiving areas'

-[development permit areas](#) with guidelines for a pedestrian-friendly form and character of development in villages

-use of amenity zoning to encourage energy-efficient buildings and settlement patterns, community farmland, land conservation and dedication of pedestrian facilities

- Langford's [Affordable Housing, Parks and Amenity Contribution Policy](#) (2005) provides incentives for redevelopment and infill development, details the General Amenity Reserve Fund for green space and requires developers to provide 25% open space for developments outside the town core. Furthermore, Langford is currently developing a [Downtown Revitalization Plan](#) that will provide development guidelines to encourage mixed-use multifamily development and pedestrian friendly streetscapes.
 - Port Alberni's [Bylaw 4395](#) (1998) permits density bonusing for mixed use developments if 75% of parking is provided underground.
 - Quesnel has designated a [Multiple Family Residential Development Permit Area](#) (2007) that permits density bonuses for developments in close proximity to downtown.
 - Area D, within the Sunshine Coast Regional District, amended its OCP to include a [Multi-Family Housing Development Permit Area](#) and has since been used to develop a small lot co-op housing development in proximity to community services.
 - Abbotsford [Development Cost Charges Imposition Bylaw 1644](#) (2007) varies pricing for single family dwellings depending on the developments density.
- **To support green transportation**
 - Quesnel's [OCP](#) (2007) states that it will promote alternative design standards for its transportation network such as lanes, boulevards and narrower streets.
 - Gibsons' [Smart Plan OCP](#) (2005) includes a policy to incorporate green road standards such as narrower streets, permeable road surfaces and sidewalks, and infiltrating drainage system
 - The City of North Vancouver has completed a comprehensive multi-modal [Transportation Plan](#) (2008) that focuses on safety and access for users
 - Kamloops has completed a [Pedestrian Master Plan](#) (2002) to foster commuting and recreational mobility for pedestrians while securing safe routes to schools and service centres
 - Oak Bay's [Bylaw 4421](#) (2008) allows low-speed electric vehicles on roads with less than a 40-50km/h speed limit
 - Anti-idling bylaws have been implemented in a range of communities, including

Gibsons ([Bylaw 1010](#) – 2005) and the City of Vancouver ([Bylaw 9344](#) - 2006)

- Saltspring Island’s [OCP](#) (see C.2.) identified a potential transit route in 1998 and included policies to direct new development within walking distance of it. Clustering of new development and community facilities along the potential route eventually created a settlement pattern in a rural environment that would support establishment of a transit service.
- The Capital Regional District approved [Bylaw 3438](#) (2007) establishing a community transit and transportation service on Salt Spring Island. Furthermore, [Bylaw 3450](#) (2007) establishes the advisory Salt Spring Island Community Transit and Transportation Commission.
- Chetwynd is rebuilding and revitalizing its network of hiking trails as part of funding received through the [Ministry of Community Development’s Job Opportunity Program](#).
- Langford is developing an Active Transportation Plan to link and strengthen non-motorized transportation options.
- **To support local food supply:**
 - Saanich amended its [Zoning Bylaw 8200](#) (2003) to allow community gardens as a permitted land use in all zones, except natural parks or environmental conservation areas; introduced density bonuses for community gardens; and purchased ALR land rezoned it to Rural Demonstration Farm Zone and leased to a farm.
 - City of Victoria’s [Community Gardens Policy](#) (2005) outlines municipal support such as funding, water, and compost to maintain and develop community gardens. Where appropriate, the city will offer vacant municipal owned sites for new community gardens.
 - City of Vancouver’s [Community Gardens Policy](#) (2005) includes a clause to assist in the development of user agreements with public or private owners of sites selected to have a community garden.
 - Saanich’s [Council Policy on Community Gardens](#) (2003) directs community gardens to be included under community park acquisition and development.
 - City of Richmond [Agricultural Viability Strategy](#) (2003) is attempting to boost support for regional farms with recommendations to promote local farmers markets.

- Comox Valley Strathcona Regional Districts [Agricultural Area Plan](#) (2002) was adopted as part of a bylaw in 2003. It commits organizations to be responsible for things such as Farmers Markets and Direct Sales Associations.
- Vancouver's [Southeast False Creek Official Development Plan](#) (2005) includes a farmers market to support local food systems.
- Saltspring Island's [OCP](#) (see B.6.2.2.11) permits density bonuses in exchange for dedication of community farmland or land for community farm product processing or storage. This has recently resulted in the dedication of community farmland to a local farming association.
- Oak Bay has amended [Bylaw 2531](#) (see 6.1.2.(2)) to allow urban agriculture as a secondary use in residential zones.
- Food Charters exist in [Kaslo](#) and [Vancouver](#). In Kamloops, the Food Charter framework is integrated into its [Social Plan](#) (2009).
- Langford has negotiated and secured, through a rezoning process, that a large 525 acre development provide Community Agricultural Lands, including planting of fruit trees.

Other Actions:

- Engage and educate the broader community:
 - The Regional District of Okanagan-Similkameen has set up a web-based [Click, Hike & Bike](#) Trail Inventory.
 - Whistler has developed [Eco-Path](#), an online tool to help visitors reduce carbon emissions associated with travel.
 - Colwood has dedicated a [webpage](#) to listing local farms and food distributors in the region.
 - Vancouver's [Green Streets Program](#) encourages residents to become volunteer street gardeners in their neighbourhood.
 - Surrey engaged residents for the [East Clayton Neighbourhood Concept Plan](#) through a design charette that envisioned a community with smaller lots, townhouses and mixed land uses.

3. Siting, Function and Form of Buildings

Communities across B.C. are developing policies to promote energy efficient design for new and existing buildings. In addition, the technology, incentive and tools are available to provide renewable, alternative and integrated energy sources. When addressing energy and buildings, key community objectives include:

- Reduce building energy demand: Improving the energy efficiency (over the lifecycle) of new and existing buildings including consideration of building orientation.
- Encourage alternative energy supply: Encouraging renewable, alternative and integrated energy sources for heating, cooling and power.

Example Targets:

- Quesnel is aiming to reduce the energy consumption of new residential dwellings by 32% from 2005 levels by 2010
- Colwood is aiming to reduce energy consumption for all homes by 3% by 2010 and 20% by 2020 relative to 2007 levels.

Potential Targets:

- Reduce average energy demand per home by 20% and institutional building by 8% per square metre by 2020 as outlined in the BC Energy Efficient Buildings Strategy
- Increase dwellings with solar water heating systems to 6% based on Solar BC provincial-wide target

Policy Framework:

- **To support reduced building energy demand**

- Esquimalt's [Green Building and Development Policy](#) (2007) includes an implementation goal to require rezoning and development permits to provide a list of green building features to be incorporated into the development.
- Saanich has implemented a Private Sector Green Building Policy (2007) to, in part, fast track green building applications and review existing bylaws and policies to remove barriers preventing innovation in design.
- Victoria developed a green building policy for new private sector buildings supported by a green building best practices document that looks at regional, national and international examples.
- Campbell River created an energy efficiency checklist for developments requiring a development permit or rezoning.
- Bowen Island passed a rezoning policy that requires all developments requiring rezoning to meet Built Green Gold and EnerGuide 80 Standards.

Supporting Alternative Energy - City of North Vancouver District Heating

City of North Vancouver established a [Hydronic Heat Energy Service Bylaw](#) (2004) to create a district heating service area for Lower Lonsdale, with a requirement that all new or retrofitted buildings over a certain size be connected to and use the district energy system. A wholly owned subsidiary, [Lonsdale Energy Corporation \(LEC\)](#), was incorporated in 2003 to operate the system. The council acts as the tariff setter, regulating the rates charged by LEC. In February 2007, the City established a service area bylaw to introduce a second system, to be served by LEC, in the expanding Central Lonsdale neighbourhood.

- Colwood revised development permit areas to promote energy efficiency policies, in line with recently added provisions to the LGA (see 919.1).
- Maple Ridge implemented the [Revitalization Tax Exemption Bylaw 6412](#) (2006) for

green buildings.

- Richmond's [Green Roof Bylaw 8385](#) (2008) requires industrial or office developments greater than 2,000 square metres to have a storm water management system and landscaping enhancement objective, both of which can be met with a green roof covering 75% of the roof area.
- Langford and City of North Vancouver have signed on to the [Living Communities Coalition](#) organized by the Cascadia Region Green Buildings Council, which will set green building performance targets from Alaska to Oregon in the Pacific Northwest.

Other Actions:

- **To provide guidelines and information about building energy efficiency**
 - View Royal has published [Steps to Sustainability Homeowner Ideas](#).
 - Fort St. John has designed guidelines and brochures to encourage geothermal heating and cooling for single family, multi-family and commercial buildings.
 - Ucluelet created an [online community portal](#) as a forum for energy and community planning.
- **To provide incentives for green building**
 - Saanich has established a [Green Building Rebate Program](#) that provides free green building consultation and rebates for retrofits and new homes built to EnerGuide Green Building certifications.
 - Whistler provides energy efficient grants as an incentive for homeowners.
- **To reuse building use**
 - New Westminster enabled the reuse of a fifty year old post office by purchasing it and working in partnership to convert it into residential units which were then sold.

4. Waste and Water:

5 R's - Reduce, Reuse, Recycle, Recover and Residuals Management

Local governments are demonstrating the benefits of water conservation, zero waste, and resource recovery policies, programs and initiatives as they relate to public and private infrastructure. Key objectives could include applying the pollution prevention hierarchy (5 R's) in all decision-making, land-use planning, and community outreach activities:

- Reduce - Water and waste at the source
- Reuse - Increase reuse of water and materials
- Recycle - Increase recycling rates
- Recover - Apply Integrated Resource Recovery practices
- Residuals management - Develop low emission waste management technologies

Example Targets:

- Metro Vancouver aims to increase the use the biogas from liquid waste for energy by 10% from 2009 to 2012, and divert 70% of solid waste from disposal by 2015
- The Regional District of Kootenay Boundary aims to reach 60% diversion of landfill waste by 2010, 80% diversion by 2015 and 100% diversion by 2020.
- The Regional District of Nanaimo's ambitious goal to divert 75% of landfill waste by 2010
- Saltspring Island's has a target of 'no net increase' in water demand for rezoning applications within island waterworks districts

Potential Targets:

By 2020, communities could aim for:

- 50% of organics diverted from landfills as achieved in Nova Scotia
- 60% reduction in tonnes of CO2 per capita for solid waste based on the BC Climate Action Plan

- Capture 75% of landfill gas for energy as detailed in a Report on Inventory of [Greenhouse Gas Generation From Landfills in British Columbia](#) and submitted to the Ministry of Environment.

To support applying the 5 R's:

- To 'Reduce'
 - The District-Municipality of Mission has incorporated rainwater management policies into their 2008 [OCP](#) (see 8.2).
 - Implement residential and or commercial water metering bylaws:
 - Grand Forks' [Bylaw 1501](#) (1997) requires the installation of water meters at the city's expense for all existing commercial and major industrial buildings connected to the municipal water system
 - Pemberton's [Bylaw 544](#) (2003) requires water metering for any building connected to the Village water system at the expense of the owner prior to occupancy

What is Zero Waste?

Zero Waste is a philosophy and a goal. The idea is to reduce consumption as much as possible by using design-for-environment in all products and their packaging, and to make all products and packaging recyclable. Achieving Zero Waste depends on designing products and industrial processes so that their components can be dismantled, repaired and/or recycled. Zero Waste means linking communities, businesses and industries so that one's waste becomes another's feedstock. It means preventing pollution at its source.

Zero waste goals or support has been adopted by the Regional Districts of [Nanaimo](#), [Metro Vancouver](#) and [Kootenay Boundary](#). Many smaller communities have individually adopted policies that support zero-waste, including Nelson, [Smithers](#), Cowichan, Trail, Rossland, and Grand Forks.

The Regional District of Kootenay Boundary approved a zero waste strategy for the region in 2002. The strategy is called [Bringing Zero Waste to Kootenay Boundary – A Strategy for a Waste Free Future](#) and it provides an action plan for moving from concept to implementation.

- Develop Stormwater Management Practices and Policies:
 - Parksville included advanced [stormwater management techniques](#) into its infrastructure upgrade (2008) for several neighbourhood streets by providing drainage that closely mimics that natural landscape prior to land development.
 - Lantzville's [Bylaw 55](#) (2005) outlines rain water management standards to retain natural water flows and maximize ground water recharge for all new developments.
 - Langford's 2008 [Bylaw 1160](#) (see 5.1.2(1)) requires all storm water from drains and paved surfaces not to run off site above or below the surface.
- To 'Reuse'
 - Vernon's [OCP](#) (2008) states that infrastructure should "create a culture of sustainability" through "conservation for water" and "the reclamation and re-use of wastewater."
 - Osoyoos has included its intention to expand the use of reclaimed wastewater in its [OCP](#) (2007).
 - The 2008 Saltspring Island [OCP](#) (see C.3.2.2) supports the use of sewage treatment methods that could create a supply of recirculated water for non-potable uses.
- To 'Recycle'
 - The Regional District of Nanaimo implemented [Food Waste Disposal Ban](#) for commercial and institutional buildings which was made possible by a composting facility licensed under the [Waste Stream Management Bylaw 1386](#) (2007).
 - The [Residential Organics Collection Pilot](#) (2007-2008) in View Royal and Oak Bay laid the foundation for continued municipal collection of organic wastes in these communities.

- **To 'Recover'**

- Revelstoke is recovering heat and electricity from wood waste in its biomass gasification plant. The facility will be managed by the Revelstoke Community Energy Corp., a utility set up by the municipality, and provides an energy source for a district heating system.
- The Olympic Villages in [Vancouver and Whistler](#) will both use a form of sewage heat recovery, greatly reducing emissions from buildings.
- Saanich Peninsula Wastewater Treatment Plant will provide [hot water and space heating](#) to nearby buildings by recovering heat from its effluent.

- **To manage residuals**

- Metro Vancouver, the Port Mann, Burns Bog, and Jackman landfills all capture landfill gas. Methane gas capture at various landfills recovers energy, which can be used for both heat and electricity.

Integrated Resource Recovery

In Victoria, a brownfield site has been turned into a LEED Platinum neighbourhood. The [Dockside Green](#) includes on-site wastewater treatment and a biomass facility, providing district heating from wastes and recycling water for non-potable uses.

The City chose to redevelop the brownfield site using a collaborative, transparent [Triple Bottom Line](#) process. Without these innovative selection criteria, the project would not have included such innovative infrastructure.

Other Actions:

- **To provide education programs**
 - Surrey has created [Operation Save H2O](#), involving teams travelling by bicycle to educate residents on water conservation and metering.
 - The Kamloops [Watersmart](#) program has resulted in 23 per cent reduction of water use
- **To provide incentives for water conservation**
 - The Sunshine Coast Regional District plans to save long-term water servicing costs with its ongoing [Toilet Replacement Program](#) that provides two low-flow toilets per participating residence, including installation, for free.
- **To invest in green infrastructure:**
 - Kamloops has received [funding](#) (2009) to upgrade its wastewater treatment plant. The upgrades will reduce greenhouse gas emissions through methane capture, allow for the reuse of reclaimed wastewater effluent and composted sludge, and increase effluent quality for protecting a nearby river.
 - [Vernon, Cranbrook, Oliver](#), and [Armstrong](#) all use reclaimed wastewater for irrigation, reducing both water demand and capital costs.

5. Retaining and Enhancing Natural Environment

B.C. communities are home to many diverse ecosystems. In addition to preventing erosion, controlling crop pests and diseases, and providing habitat, ecosystems are an important carbon sink. Approximately nine tonnes of carbon can be sequestered per year with one hectare of forested land. Local governments can address the tensions between natural areas and human activities by promoting green settlement patterns that protect natural features and functions. To further the green communities visions and protect valued natural resources, ecosystems can be preserved protected and enhanced through:

- Retention of existing vegetation, trees, green space and other natural carbon sinks
- Acquiring new natural resources: new plantings, new green space and acquisition or creation of other natural carbon sinks
- Enhancing ecosystem connectivity

Target Examples:

- Saltspring Island aims to have 30% of its land base in protected status.
- The Central Okanagan Regional District is aiming to preserve and protect 10% of its urban land base for conservation purposes.

Potential Targets:

- Match the provincial governments Parks and Protected Areas target that calls for 14% of the provincial land base to be park and protected green space.
- Adopt the ICLEI Local Governments for Sustainability thresholds that suggest no more than 15% of trees planted in parks and roadways represent any one genus ; no more than 10% represent any one species; and no more than 7% of trees represent any one cultivar.

Policy Framework:

- **To support preservation, protection and enhance natural resources**
 - Nanaimo has integrated an [Urban Forest](#) program into its [OCP](#) (2008).
 - The Naramata [Rural OCP](#) (2008) promotes a system of representative protected areas and biological corridors with infill development to protect agricultural and rural lands
 - The City of North Vancouver has completed a [Street Tree Master Plan](#) (2004) by using STRATUM software to model and quantify the benefits in a triple bottom line approach to urban forestry management.
 - Victoria enacted an [Integrated Pest Management Policy](#) (2003) that ties in with FCM's national strategy encouraging responsible pesticide use.
 - Cariboo Regional District has enacted a [Shoreland Management Policy](#) (2004) to protect lake shorelands from development pressures.
 - Tree Protection Bylaws:
 - Vernon's [Bylaw 4152](#) (1996) has required a permit where anyone proposes to damage or cut down any tree over a certain diameter.
 - [Nanaimo's Bylaw 4695](#) (1993) prohibits anyone from cutting down a tree without a permit.
 - Smithers has implemented a comprehensive [Tree Preservation Bylaw 1225](#) (1997) that is enforced with significant fines.
 - The City of Victoria's [Bylaw 07-094](#) (2009) and Esquimalt's [Bylaw 2686](#) (2008) are among the many examples of bylaws that have implemented by B.C. local governments to reduce pesticide use.
 - The City of Nanaimo's [Bylaw 4000](#) (2005) promotes cluster housing in suburban areas to protect primary conservation areas such as steep slopes and watercourses.
 - District of North Vancouver's [Bylaw 6515](#) (1993) consolidates regulations relating to

trees, watercourses and soils and requires an environmental impact assessment for the latter two designations.

- The Saltspring Island [OCP](#) (2008) permits density bonuses in exchange for dedication of land for conservation purposes.
- The Islands Trust's [Natural Area Protection Tax Exemption Program](#) (2005) gives property owners a 65% reduction in property taxes if they register a conservation covenant on their property.

Other Actions:

- **To creatively engage and educate stakeholders, decision makers and the broader public**
 - The City of Nanaimo held series of public open houses to build awareness and understanding of forest values as it develops its [Urban Forest Management Plan](#) (2009).
 - The Sunshine Coast Regional District developed a public online [Habitat Atlas](#) that enables informed land use decisions.
 - The Capital Regional District has developed an online [Natural Areas Atlas](#) to support informed land use decisions.
 - 100 Mile House maintains a demonstration forest serving several functions, including biodiversity, recreation, green infrastructure, and community involvement.
 - Nanaimo has adopted the [Burn it Smart](#) Program, designed to reduce the emissions and health consequences from burning wood.
 - Kamloops is providing free Aspen trees to residents who will commit to maintaining them on boulevard areas along the frontage of their properties.
- **To better understand and protect trees within the built environment**
 - Cranbrook partnered with Communities in Bloom, a non-profit organization, whose volunteers catalogued the community's trees and entered the info into a GIS database.

- Kelowna completed an innovative [Urban Forest Effects Analysis](#) which looks at the structure, function, and benefits of its urban forest.
- Kelowna utilizes silva cells to increase health of planted trees downtown and has developed rubber sidewalks around mature trees to avoid damaging roots.

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