~ There is still time to avoid the worst impacts of climate change, if we take strong action now. ~
Sir Nicholas Stern

DISTRICT OF SUMMERLAND

SUMMERLAND'S COMMUNITY

CLIMATE ACTION PLAN

Prepared by Development Services, District of Summerland
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March 24, 2011

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SUMMERLAND'S COMMUNITY CLIMATE ACTION PLAN

EXECUTIVE SUMMARY

March 2011

WHY TAKE ACTION ON CLIMATE CHANGE?

Climate Change

Climate change is a major challenge facing our society. Climate change is a measurable long-term shift in climate that can be caused by natural processes and human activity. The build-up of greenhouse gas (GHG) emissions in the atmosphere from the burning of fossil fuels is a major contributor to climate change. In BC's interior, between the years 1895 and 1995, average annual temperature warmed by 1.1°C . Climate Change **IS** occurring and expected to continue over this century with economic, social, and environmental impacts. Additionally, the reliance on fossil fuels is compromising the environment through increasing greenhouse gas emissions and energy security through rising energy costs. How these challenges are currently addressed by all levels of government and individuals will determine the ease with which their impacts are felt.

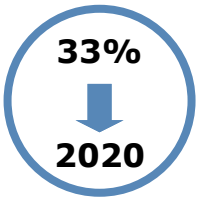
Provincial Legislation

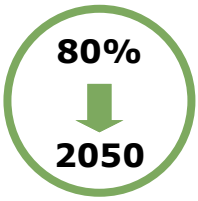
The Government of British Columbia is committed to addressing climate change and to reducing greenhouse gas emissions. This commitment was demonstrated by introducing Bill 44: Greenhouse Gas Reduction Targets Act (2007). Bill 44 commits the Provincial Government to a province-wide reduction of GHG emissions below 2007 levels of **33% by 2020** and **80% by 2050.**

Nearly half of GHG emissions are under the influence of B.C. local governments and so the Province enacted Bill 27 requiring all local governments to include greenhouse gas reduction targets within their Official Community Plans and Regional Growth Strategies .

Summerland's OCP targets for the reduction of GHG emissions are:

- 33% below 2007 levels by 2020; and
- 80% below 2007 levels by 2050.

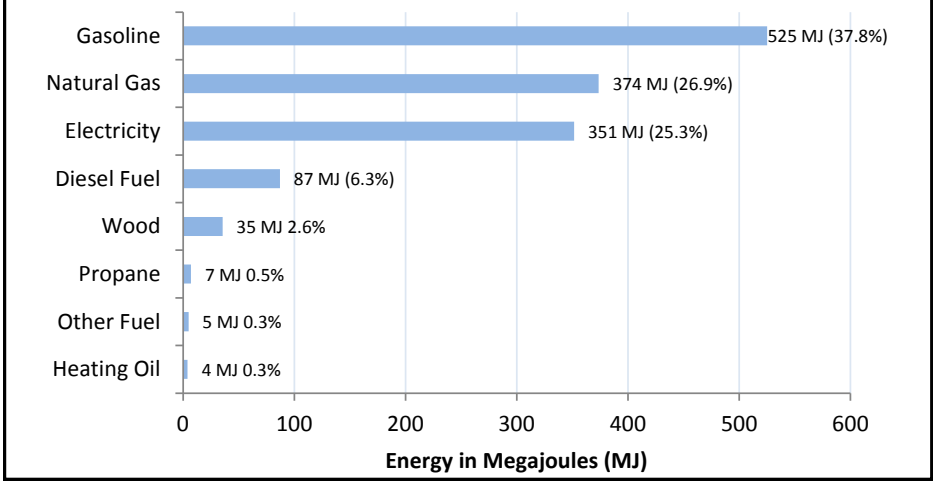




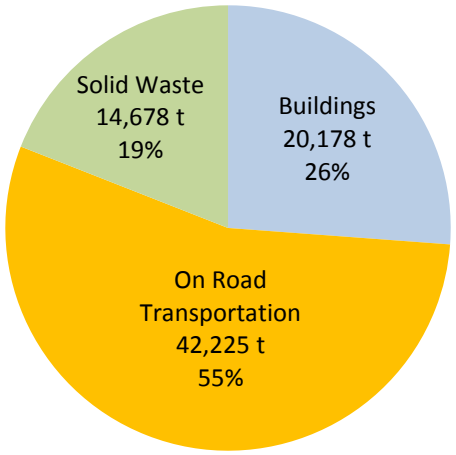
WHERE DOES SUMMERLAND STAND?

The Province of British Columbia prepared community energy and emissions inventories for each local government in BC for 2007. Having baseline data from 2007 will help Summerland measure progress towards reducing carbon emissions. An energy and emissions assessment also shows how much energy we are using, the source, and resulting greenhouse gas emissions.

Summerland's Source of Energy, 2007



Summerland's Source of GHG Emissions, 2007



2007 Baseline for Summerland

- **1,388,595** Gigajoules (GJ) of energy Used
- **77,081** tonnes of CO2e emitted
- **$32.9** Million spent on energy in the community or **$2,992** per person

Buildings: The amount of electricity and natural gas delivered to Summerland by major utility companies in British Columbia, not exclusively for buildings.

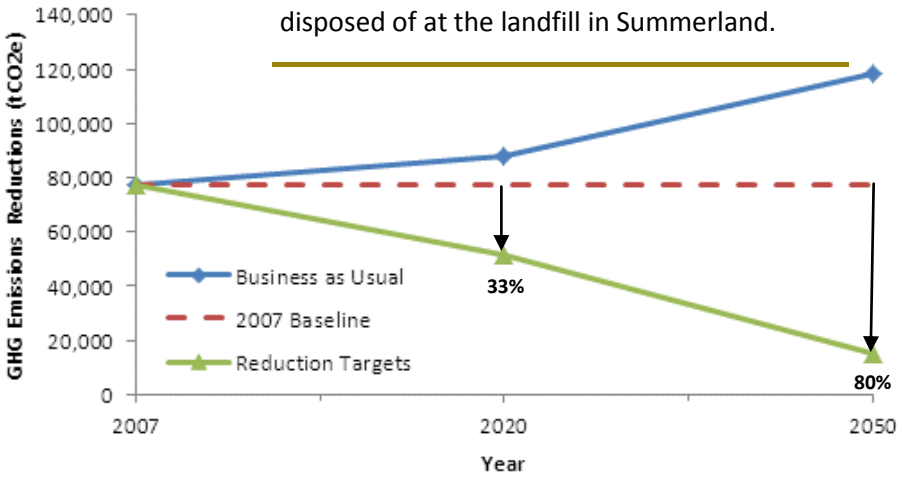
On-road Transportation: The amount of fuel used by on-road vehicles registered, from ICBC, in Summerland.

Solid Waste: The amount of solid waste disposed of at the landfill in Summerland.

The Challenge that lies ahead

To reach the emissions reductions targets in the OCP, by 2020 Summerland must be removing at least **25,437** tonnes of CO2e from the atmosphere per year and work up to **61,665** tonnes CO2e yearly by 2050.

Business as Usual is based on current energy consumption data and a projected population growth rate of 1%.



HOW WILL WE TAKE CLIMATE ACTION?

Goal 1: Minimize urban sprawl and promote compact, energy-efficient development with access to amenities within walking and cycling distance.

* Support the trading of ALR land within 800 metres or about a 10 minute walk of downtown with land in the periphery if additional development land is required.
* Review Official Community Plan and Land Use Map to limit urban sprawl and promote smart growth. This may include guiding growth in nodes and along corridors and in areas where there is municipal sewer. Refine the UGA (urban growth area).
* Increase densities in the 1999 Zoning Bylaw.
* Prepare a sustainable development checklist to be used during the development application process.
* Consider reviewing the Development Cost Charges Bylaw, Fees and Charges Bylaw, and the Procedures Bylaw to ensure that the regulations are promoting energy-efficient, compact development and not urban sprawl.
* Consider Investigating changes to the Fees & Charges Bylaw regarding the electric heating installation charge.
* Review the suitability of creating a development permit area (DPA) for sustainable development.
* Consider preparing a Downtown Plan that includes opportunities for sustainability.
* Consider preparing a Transit Plan with maps of proposed routes and coordinated with growth nodes and corridors.
* Consider rewriting the Official Community Plan to integrate land use, transportation, and energy planning into one document.
* Development Services staff will provide current sustainability information and promote incentive programs to people who make inquiries and/or take a Building Permit Application.
* Consider exploring an incentive based permit fee where fees decrease as sustainability features increase.
* Request a Home Energy Audit with applications for new buildings or major renovations. This home energy rating will be put into the Municipal system (GIS database) attached to the property.
* Support the continuation of the Green Cents program, or equivalent, and its evolution to provide "green certification" for businesses to show their sustainability initiatives while reducing greenhouse gas emissions.
* Encourage individual metering of utilities in multi-unit residences.

Goal 2: Improve transportation efficiency.

* Support private transit options.
* Lobby BC Transit for better transit service and consider regional partnerships to improve transit service.
* Improve pedestrian and cycling infrastructure. This includes more multi-use trails that are connected to a trail network. All collector road re-construction should consider the inclusion of bicycle lanes and sidewalks.
* Provide information on transportation alternatives (electric assist bicycles) and communicate the lifestyle and financial benefits of public transit and active transportation.
* Encourage strata buildings to provide co-op vehicles to allow for parking reductions.
* Investigate the construction of a multi-use trail between Lower Town and Trout Creek.
* Consider providing adequate and accessible bicycle parking at all Municipal facilities.
* Support a bicycle co-op; organizations where volunteers teach people how to ride, fix, and build bicycles for free or cost recovery.
* Promote amenities for electric vehicles and micro vehicles.
* Consider developing a strategy for electric vehicle charging stations (pay per kWh) in core areas of Summerland.
* Support a regional carpool initiative.
* Support and participate in Bike to Work Week and Car-Free Day programs.
* Consider providing anti-idling signage for the downtown core.
* Consider a pilot project that follows the transportation habits of a few families in Summerland over one month. Then provide them with tools like carpool.ca and motor assist bicycles for one month and see if they were able to reduce their vehicle use.
* Provide "Smart-Driver" tips to residents to help them reduce their fuel consumption and GHG emissions.

Goal 3: Support public participation, education and awareness initiatives.

* Consider posting sustainability information on the District of Summerland website.
* Consider preparing a Communications Plan to address education and outreach for Summerland's Climate Action Plan.
* Form a Climate Action Working Group to work with staff to increase community awareness and aide in Plan implementation.
* Consider collaborating with the RDOS to develop a Sustainable South Okanagan Website with information, blog, and possibly a re-use trading site.
* Support the offering of a xeriscaping course.
* Support the offering of water conservation and/or drip irrigation courses.

Goal 4: Identify and support effective greenhouse gas reduction initiatives.

* Promote the Canada Post Red Dot Campaign to reduce junk mail.
* Encourage anaerobic digestion opportunities for orchards, wineries & breweries.
* Consider hosting a District-wide garage sale to encourage reuse and recycling.
* Work with the private sector to increase the diversion of construction and demolition materials from the landfill.
* Work with the business community to reduce the use of plastic bags and increase the use of cloth bags for purchases.
* Investigate alternative ways to charge for garbage. This may include implementing a one-bag limit on garbage or going from a flat-rate system to a pay-per-use system.
* Consider disseminating recycling/waste bins throughout the community. These bins separate garbage and recycling and are placed in public areas like downtown, parks, arenas, etc.
* Research the feasibility of a Municipal RE-USE IT location where people can bring building materials that have reuse value.
* Consider providing glass pick-up or recycling if it is viable. Even if it is just a bin somewhere or pick-up once a month.
* Investigate a commercial recycling program for Summerland businesses.

Goal 5: Promote energy conservation and dissemination of renewable energy technologies.

* Consider implementing a time-of-use energy consumption education program and make home energy monitors available to customers, for a limited time to educate them on usage.
* Consider new technologies and/or partnerships that reduce peak energy demand, generate renewable energy, or reduce energy consumption.
* Consider regulations for wind turbines in the Zoning Bylaw.
* Consider a program that makes Smart Meters available to customers who are either interested in producing on-site renewable energy or interested in time-of-use data. Also make available a guide outlining the standards and procedures.
* Investigate opportunities for alternative renewable energy generation (geothermal, wind farms, micro-hydro on creeks).
* Investigate opportunities for district energy and/or lake cooling.
* Consider preparing a Plan to move towards a Smart Grid.

Goal 6: Maintain and enhance the urban ecosystem.

* Support the creation of a local food map like a tourist map that locates local food suppliers such as local fruit, wine, eggs, chickens, etc.
* Support Municipally owned vacant lots to be used for community gardens.
* Review policy and regulations to ensure parking lots are landscaped to provide shade and permeability.
* Consider adding street trees as a requirement in the Subdivision and Development Bylaw.
* Consider preparing a Tree Preservation Bylaw.

Goal 7: Demonstrate Municipal leadership.

* Consider updating the community travel survey at regular intervals. This information will provide more accurate travel data for Summerland.
* Consider mapping Summerland's urban forest and identify tree planting locations in the municipality.
* Based on the District of Summerland's yearly operational carbon footprint and the dollar amount equal to the prevailing market value of a tonne of carbon will be set aside in the annual budgeting process to buy carbon offsets or for inclusion in the Climate Action Fund.
* All newly constructed, municipally owned and operated buildings, shall be at least 25 percent more energy efficient than those built to Provincial building codes.
* Promote the ideas of "Carbon-neutral Vacations" or "Eco-Tourism" in Summerland through the Chamber of Commerce.
* Support incentives to bring new green businesses to the community.
* Encourage industrial businesses to cooperate in sharing resources to reduce waste and pollution.
* Consider implementing a rain barrel program to be rolled out with the first metered water bill.
* Encourage greywater recycling and rainwater harvesting in new developments.
* Provide educational material on Xeriscaping and eco-lawn (or lawn alternatives).
* Support initiatives that improve air quality such as increasing our urban forest, lowering transportation emissions and improving and reducing all wood burning practices.
* Review and enforce outdoor burning regulations.

WHAT'S NEXT?

Implementation and Monitoring

Form a Climate Action Working Group

Responsibilities of this working group will include:

* Actively promoting Summerland's Community Climate Action Plan within the community through participation, education, and awareness initiatives;
* Ensuring that the goals within the Plan are met through implementing the actions; and
* Reporting annually on the progress of the actions within the Plan;

District of Summerland Responsibility

* The District of Summerland will appoint a staff member to be responsible for coordinating the implementation of the Community Climate Action Plan.

Integration into Planning and Budgeting

* Actions will be identified for inclusion into the District's annual budget and priorities planning process.

Monitor Progress

A fundamental component of the Community Climate Action Plan is to enable the District of Summerland to assess the progress of the community towards the defined targets to reduce GHG emissions. Indicators will help determine if the actions that have been implemented are moving the District towards or away from the goals within the Plan and if changes are needed. The Plan has a list of suggested indicators to monitor progress.

Reporting

* It is proposed that a brief annual progress report be prepared by the Climate Action Working Group to monitor progress of the implementation of the CCAP.
* It is recommended that Summerland community energy and emissions data be analyzed every four years starting with the 2010 collection year. The in-depth reporting every four years will reduce the amount of work associated with compiling data on an annual basis.

Funding

* The District of Summerland has limited monetary resources available which limits the incentives that can be offered for residents to take climate action.
* It is expected that the District of Summerland will be able to provide staff and program administration resources, while other organizations will have to be relied on to provide funding incentives. Partnerships and cost sharing initiatives can build relationships and reduce costs to achieve the most from implementing the Community Climate Action Plan.

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1 Introduction

1.1 Climate Change

Climate Change is a significant challenge facing our society. Climate change is a measurable long-term shift in climate that can be caused by natural processes and human activity. A major concern is the build-up of greenhouse gas (GHG) emissions in the atmosphere from the burning of fossil fuels. Fossil fuels are a non-renewable resource and reserves are being depleted. Peak Oil is a concept of a point in time when the rate of global petroleum extraction reaches a peak and starts to decline. With petroleum production declining and demand for petroleum increasing, the end of cheap fossil fuels is at hand. Climate Change is occurring and expected to continue over this century with economic, social, and environmental impacts. Additionally, the reliance on fossil fuels is compromising the environment through increasing greenhouse gas emissions and energy security through rising energy costs. How these challenges are currently addressed by all levels of government and individuals will determine the ease with which their impacts are felt.

There are two aspects of climate change that local governments need to address. The first is the amount of greenhouse gas emissions they generate that contributes to climate change. The second is to adapt to the changes in climate due to high levels of GHG emissions in the atmosphere. Some of the anticipated impacts due to climate change are heat waves, drought, intense precipitation, and extreme weather events that may result in flash floods, forest fires, and reduced water quality. Municipalities need to adjust policies and take action to reduce GHG emissions and the negative impacts of climate change.


Photo by: F. Martens

A review of Summerland's Official Community Plan (2008) identified a key community direction to set clear limits to growth and reduce the reliance on the automobile[1]. This shows support for community action to reduce greenhouse gas emissions. The District of Summerland is taking action through planning initiatives and collaboration with neighbouring local governments. In addition to reducing greenhouse gas emissions, climate action will also make Summerland a more liveable and economically stable community.

1.2 Benefits of Climate Action Planning

A local government is responsible for providing an environmentally, economically, and socially sustainable community for current and future residents. Choices made now will determine future costs and benefits to a community. Investing in Climate Action Planning will set the roadmap for future decision-making and lead the way to a more sustainable community. The benefits of Climate Action Planning are outlined below.

[1] District of Summerland. 2008. Official Community Plan. Section 4.2.1.

1.2.1 Environmental

"Energy efficiency and renewable energy result in reduced GHG emissions, improved air quality, and healthier ecosystems"[2].

1.2.2 Economic

Aside from being good for the environment, investing in energy-efficient technologies, renewable energy, sustainable transportation, and waste reduction technologies can boost the local economy and significantly reduce energy costs. Also, reducing dependence on fossil fuels can help when energy prices soar and if there are brown or black-outs with energy supply.


Photo by: L. Vinnedge

1.2.3 Social

A Community Climate Action Plan will recommend actions to address the built environment through more compact, walkable, and energy-efficient development. Actions may include adopting zoning practices that regulate land use patterns and built forms that increase densities and reduce urban sprawl. This type of sustainable development can have multiple benefits to a community. Sustainable development can reduce automobile dependence, increase walkability, and decrease energy use which improves quality of life.

There are also health benefits associated with sustainable development such as improved air quality and health due to a more active lifestyle.

1.3 Plan Development

Summerland's Climate Action Plan was initiated in 2009 with a Council decision to hire a Climate Action Planner. The District of Summerland, Development Services Department, coordinated the Climate Action Planning initiative with input from a Climate Action Advisory Group comprised of community stakeholders. The Climate Action Plan is a multi-year project expected to be complete in 2011.

The planning process consisted of the following steps:

1. Analyzed data provided by the Province of British Columbia to establish the 2007 baseline energy and emissions for Summerland.
2. Prepared an update to the Official Community Plan to establish goals for climate action, greenhouse gas emissions reduction targets, and policies based on feedback from the public and staff.
3. Prepared a Community Climate Action Plan outlining baseline data, goals, targets, actions to reduce community greenhouse gas emissions, and an implementation and monitoring strategy.
4. Will continue to monitor energy and emissions data and report reduction achievements as well as amend the Community Climate Action Plan periodically to keep it current.

[2] Community Energy Association (CEA). (2008, September). *Community energy & emissions planning: A guide for B.C. local governments*. p. 3. Retrieved January 12, 2010, from the Community Energy Association Web site: http://www.communityenergy.bc.ca/resources/cea-publications-0.

1.4 Community Engagement

The District of Summerland provided opportunities for public involvement in the preparation of Summerland's Community Climate Action Plan. Public involvement included the following:

- An initial open house to provide information and gain feedback on greenhouse gas emissions targets for Summerland (May 6, 2010).
- A Community Climate Action Plan Newsletter (Delivered in first week of July 2010).
- An open house to provide information and gain feedback on proposed Official Community Plan changes to address climate change (July 15, 2010).
- A Climate Action Advisory Group was formed (first meeting September 16, 2010).
- The Climate Action Workshop #1 was held to discuss and analyze specific actions to reduce greenhouse gas emissions (November 10, 2010).

- The Climate Action Workshop #2 was held to screen and prioritize specific actions (December 7, 2010).
- An open house was held to gain feedback on the draft Community Climate Action Plan for Summerland (March 9, 2011).
- Council Statutory Public Hearing (2011).

1.5 Objectives of the Climate Action Plan

The overall objective of Summerland's Community Climate Action Plan is to provide a roadmap to achieve the greenhouse gas emissions reduction targets set out in the Official Community Plan. The Province of British Columbia provided 2007 baseline data in a Community Energy and Emissions Inventory (CEEI) Report. In this CEEI report for Summerland, GHG emissions were broken out into the following sectors: buildings, on-road transportation, and solid waste. Therefore, the focus of this Plan is to reduce greenhouse gas emissions from these three sectors.

1.6 Plan Organization

Summerland's Community Climate Action Plan is organized into five sections:

Section 1: **Introduction** explains the issue of climate change and the need for climate action planning.

Section 2: **Summerland Context** examines Summerland's climate, energy, statistics, and direction from different levels of government.

Section 3: **Baseline Energy and GHG Emissions** provides energy consumption and greenhouse gas (GHG) emissions data as well as a simple growth forecast.

Section 4: **Taking Climate Action** specifies goals, initiatives, and actions including action timelines and department responsibility.

Section 5: **Implementation and Monitoring** outlines steps to move forward once the Plan has been adopted.

2 Summerland Context

The District of Summerland is located within the Regional District of Okanagan Similkameen on the south-western shore of Okanagan Lake (see Figure 1). Summerland has a total area of approximately 7442 hectares (18,389 acres)[3]. The population of the District of Summerland was 11,007 people in 2010[4].

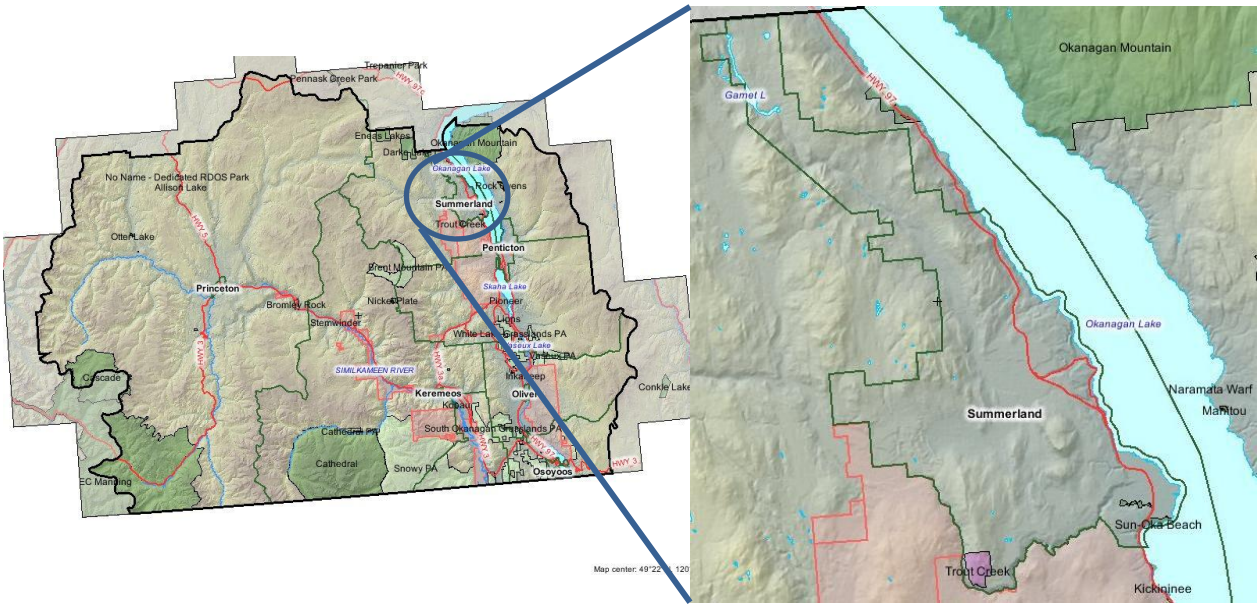


Figure 1: Location of the District of Summerland.

2.1 CLIMATE

The climate in British Columbia has changed over the last hundred years and effects are evident in the Okanagan Valley. British Columbia's average annual temperature, between the years 1895 and 1995, warmed by 0.6ºC at the coast, 1.1°C in the interior and 1.7°C in the north[5]. In southern BC, precipitation has increased by 2 to 4 percent per decade between 1929 and 1998[6]. Climate models are predicting warmer, wetter winters and hotter, dryer summers with an increase in total annual water supply (See Table 1). What this may mean for Summerland is less snow, more rain, flooding and the need for stormwater management in the spring and drought and increased water demand in the summer.

Table 1: Range of predicted changes in winter and summer temperature and precipitation by 2050 for the Central Interior in British Columbia.[7]

BC Location	Temperature Change by 2050 (ºC)		Precipitation Change by 2050 (%)	
	Winter	Summer	Winter	Summer
Central Interior	0.5 to 4.5 warmer	1.5 to 3.5 warmer	0 to 30 wetter	-20 to 0 drier

[3] District of Summerland. 2008. Official Community Plan. Section 2.2.
[4] BC Stats. http://www.bcstats.gov.bc.ca/.
[5] British Columbia Ministry of Environment. Climate Change: Provincial Impacts. Website accessed December 23, 2010. http://www.env.gov.bc.ca/cas/impacts/bc.html.
[6] Ibid.
[7] British Columbia Ministry of Environment. British Columbia Coast and Marine Environment Project 2006: Climate Change. Accessed online December 24, 2010 at http://www.env.gov.bc.ca/soe/indicators/bcce_temp/03_climate_change/technical_paper/climate_change.pdf.

In addition to BC's changing climate, the current BC population is projected to increase to 6.1 million by 2036[8]. This population growth and accompanying activity will place additional demands on the quality and supply of water. Small changes in climate can have significant ecological, social, and economic consequences. This has already been seen with the mountain pine beetle infestation in interior BC.

All local governments in British Columbia face obstacles adapting to the impacts of climate change and the challenge of reaching Provincial greenhouse gas emissions reduction targets. The District of Summerland is a small municipality within the Regional District of Okanagan Similkameen. Although small, this municipality recognizes the significant impact they can make to reduce their contributions to climate change.

2.2 Energy Security

As a society, we are dependent on fossil fuels to maintain our way of life. How we heat and cool our homes, how we travel between destinations, the products we use, and the food we eat all require fossil fuels in some way. When world demand for oil surpasses supply, prices start to increase for virtually everything. This phenomenon is inevitable and our dependence on fossil fuels makes us vulnerable to fluctuating energy prices.

Fluctuations in energy markets since 2007 have made it difficult to forecast our energy future. Various sources forecast varying demands, supplies, and prices of energy. The following sources for information are from respected organizations:

- "World primary energy demand is projected to increase by 1.5% per year between 2007 and 2030...an overall increase of 40%."[9]
- Output from existing oil fields will drop by almost two-thirds by 2030, requiring investment in new fields, unconventional oil, and natural gas liquids.[10]
- Oil prices are assumed to reach $100 per barrel by 2020 and $115 per barrel by 2030 (in year-2008) dollars.[11]
- "Natural gas consumption worldwide increases by 44 percent" between 2007 and 2035. Natural Gas supplies should keep markets well supplied and prices low.[12]
- FortisBC estimates that rate increases between the years 2012 and 2016 will be more than 35 percent.[13] If the District of Summerland increases electricity prices at the same rate, residents could be paying 12.75 cents/kWh by 2016. These rate increases are estimates and are based on the need for future infrastructure upgrades and expansion.


Photo by: S. Reimer

[8] BC Stats. http://www.bcstats.gov.bc.ca/
[9] International Energy Agency. World Energy Outlook Executive Summary 2009. p. 4.
[10] International Energy Agency. World Energy Outlook 2009. Presentation to the press. Slide 6. http://www.iea.org/speech/2009/Tanaka/WEO2009_Press_Conference.pdf.
[11] International Energy Agency. World Energy Outlook Executive Summary 2009. p. 6.
[12] US Energy Information Association. International Energy Outlook 2010. p. 3.
[13] FortisBC. Feb 2011. FortisBC Integrated System Plan. Presentation from Public Open House. Slide 22.

- "Falling energy investment will have far-reaching and depending on how governments respond, potentially serious consequences for energy security, climate change, and energy poverty."[14]

In 2007, Summerland residents and businesses spent over $32 million on energy. Much of this money leaves our local economy and goes to Fortis, Terasen, and big oil companies. If Summerland doesn't switch to more efficient vehicle and building technologies, improve public transit, and reduce urban sprawl, energy spending could double by 2030.

FortisBC provides bulk electrical power to Summerland Power for distribution which allows the District to pass cost benefits to customers. However, the District of Summerland is at the mercy of FortisBC regarding rate increases. Money paid to FortisBC is money leaving the community and going to a utility company as well as the provincial and federal governments in the form of taxes. By investing in energy conservation, energy efficiency, or local renewable energy projects, Summerland may have more independence and security from energy price shocks or supply shortages. Also, money saved or spent in the community will remain in the community and stimulate the local economy.

Investing in renewable energy could reduce Summerland's vulnerability to energy instability and boost the economy. There are numerous economic benefits to investing in renewable energy. "Given rapidly rising interest in energy alternatives, future years may well see worldwide employment soar—possibly as high as 2.1 million [jobs] in wind energy and 6.3 million [jobs] in solar PVs[15] by 2030, and on the order of 12 million jobs in biofuels-related agriculture and industry."[16] By investing in technology to reduce dependence on fossil fuel and electricity from Fortis, Summerland could reduce vulnerability to the fluctuations in energy prices. Also, the local economy would see a boost with the creation of jobs directly or indirectly related to the green economy.

2.3 Population and Dwellings

Between 1996 and 2010, population growth for the Regional District of Okanagan-Similkameen (RDOS) was 5.3 percent. Summerland's population growth between 1996 and 2010 was 0.73 percent[17] (see Table 2). British Columbia Statistics estimate that the Regional District of Okanagan-Similkameen (RDOS) will experience an annual population growth rate of between 0.1 and 0.6 percent to 2036[18]. There are no data projecting Summerland's population change to 2036; however the Regional Community Climate Action Plan uses a 1 percent growth rate for Summerland in regional calculations.

[14] International Energy Agency. World Energy Outlook Executive Summary 2009. p. 5.
[15] Photovoltaics.
[16] Worldwatch Institute. *Green Jobs: Towards decent work in a sustainable, low carbon world*. UNEP/ILO/IOE/ITUC, September 2008.
[17] BC Stats. Regional Population Estimates and Projections. http://www.bcstats.gov.bc.ca. Accessed January 25, 2011.
[18] BC Stats. Regional Population Estimates and Projections. http://www.bcstats.gov.bc.ca. Accessed January 25, 2011.

Table 2: Population and Dwelling Type within the District of Summerland (1996, 2006, 2010).

Population	1996	2006	2010
Total	10,927	10,911	11,007
Dwelling Type	**1996**	**2006**	**2010**
Vacant Residential	463	412	441
Single Family (Urban)	4,030	3,781	3,914
Single Family on ALR	214	284	363
Single Family Farm	273	266	213
Multi-unit Residential	-	590	815
Other Residential	81	172	98
Total	5,061	5,505	5,844

Approximately 67 percent of the housing stock in Summerland, in 2010, is classified as urban single-family dwellings and 14 percent as multi-unit residential. The energy used by a single detached home is significantly more than the energy used by a single attached home or a unit in a multi-unit residential building. Also, newer buildings tend to use less energy. Since the majority of Summerland's housing stock is aging single-family, there is an opportunity to target these buildings for strategies to improve energy-efficiency.

2.4 Open Air Burning

When wood is burned it releases greenhouse gases into the atmosphere. Wood is considered to be more environmentally friendly than fossil fuels because trees are renewable and if burned new trees can absorb the carbon dioxide. However, even though wood is considered a renewable resource, it is inferior to solar, wind, or hydro due to the emissions and particulates released from burning.

The District of Summerland has a Fire and Life Safety Bylaw #2421 with Part VIII for Open Air Burning. Summerland residents have outdoor burning restrictions based on property size, permitted materials, and day. The minimum separation distances between the fire and buildings restrict open burning to large properties. Also, outdoor burning is only permitted October 15 to April 15 annually and on days identified as good ventilation days by Environment Canada. Permitted burning materials include parts of trees such as branches, trunks, stumps, and pruning. Open air burning statistics are shown in Table 3.

Table 3: Open Air Burning Statistics for the District of Summerland January 2010 to December 2010.

	Number of Open Air Burning Permits		
	2008	**2009**	**2010**
New Permits Issued	45	24	187
Daily Permits Issued	488	398	398
TOTAL	**533**	**422**	**585**

	Number of Days Open Air Burning is Permitted		
April 15 - October 15	**2008**	**2009**	**2010**
TOTAL	69	52	68

**Data obtained from the District of Summerland Fire Chief.

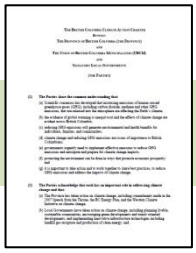
2.5 PROVINCIAL DIRECTION

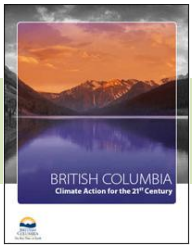
The Government of British Columbia is committed to addressing climate change and to reducing greenhouse gas emissions. This commitment was demonstrated by introducing Bill 44: Greenhouse Gas Reduction Targets Act (2007). The Greenhouse Gas Reduction Targets Act (2007) commits the Provincial Government to a province-wide reduction of GHG emissions below 2007 levels by 33 per cent by 2020 and 80 per cent by 2050. The Community Energy Association reports an estimate that nearly half of GHG emissions are under the influence of B.C. local governments and therefore they will play a major role in achieving Provincial GHG reduction goals[19].

To help achieve the Provincial reduction targets, the BC Government passed a number of significant plans and policies. Some of these include:

- **Bill 27 (2008), Local Government (Green Communities) Statutes Amendment Act.** This legislation led to amendments in the Local Government Act (LGA) requiring local governments to include greenhouse gas reduction targets within their Official Community Plans and Regional Growth Strategies[20].
- **Climate Action Charter.** This Charter is a voluntary measure acknowledging the major role that Municipalities play in reducing Provincial greenhouse gas emissions. Signing on the Climate Action Charter commits each municipality to[21]:
    - measure and report their community GHG emissions;
    - become carbon neutral in respect of their operations by 2012; and
    - create complete, compact, more energy efficient rural and urban communities.
- **BC Climate Action Plan.** This Plan features key actions for every sector of the economy to take the Province 73% of the way to meeting the 2020 emissions reduction target of 33% below 2007 emissions levels.[22]
- **2008 Utilities Commission Amendment Act.** This Act is to encourage more low-carbon energy generation projects.
- **BC Building Code.** The Greening of the BC Building code is an ongoing project to improve energy performance of housing and reduce potable water consumption.

If the Province needs to reduce GHG emissions below 2007 levels by 33 per cent by 2020 and 80 per cent by 2050, they need to be aggressive and show leadership.





[19] Community Energy Association. Community Energy and Emissions Planning: A Guide for B.C. Local Governments. September 2008. p. 2.
[20] See the Local Government Act (LGA) (1996) Section 877 (3) and Section 850 (2).
[21] B.C. Climate Action Charter. (2009, October). Retrieved from http://www.cd.gov.bc.ca/ministry/whatsnew/climate_action_charter.htm
[22] Province of British Columbia. Climate Action Plan. 2008.

2.6 Regional Climate Action Planning

The Regional District Okanagan-Similkameen (RDOS) is responsible for many areas of planning that impact climate change such as growth management, transportation, waste management, and air quality. To maximize the benefit of actions to reduce greenhouse gas (GHG) emissions, it is important to build partnerships between the region and member municipalities. There are opportunities to share resources, leverage investments, and encourage regional consistencies which could result in increased public involvement.

The South Okanagan Regional Growth Strategy (RGS), Bylaw 2421, 2007, has six growth management goals (See Table 4).

Table 4: Six Growth Management Goals in the South Okanagan Regional Growth Strategy.

Six Growth Management Goals - South Okanagan Regional Growth Strategy	
Goal 1	Promote sustainable economic diversification
Goal 2	Ensure the health of ecosystems
Goal 3	Promote inclusive and accountable governance
Goal 4	Carefully direct human settlement
Goal 5	Maximize the efficient use of infrastructure
Goal 6	Create safe, culturally diverse and healthy communities

The Regional Growth Strategy (RGS) has policy to support climate action goals and initiatives set out in this Plan.

Some policies under Goal 2 are:

- EN3. Reduce contribution to and increase adaptation to climate change.
- EN4. Protect regional air quality.
- EN5. Promote water sustainability through conservation and related best practices.

Some policies under Goal 4 are:

- H1. Dialogue between rural and urban communities to direct development to Primary Growth Areas and, to a lesser extent, to Rural Growth Areas.
- H2. Promote compact urban form.
- H5. Recognize the critical link between infrastructure, environment, social conditions and human settlement for effective growth management.

Some policies under Goal 5 are:

- I2. Preferentially direct development where public cost-efficient service and infrastructure is possible.
- I3. Recognize the critical link between water resource management, human settlement and effective growth management.
- I4. Minimize waste production through education, regulations that promote reduction and recycling programs in the region.
- I6. Increase transportation options, improve transportation efficiency and reduce automobile dependency.

The Regional District of Okanagan-Similkameen (RDOS), in partnership with Keremeos, Oliver, Osoyoos, Penticton, Princeton, and Summerland, developed a Regional Community Climate Action Plan. The South Okanagan Similkameen Regional Community Climate Action Plan has eight strategies to provide guidance on how to reduce regional energy use and greenhouse gas (GHG) emissions (See Table 5).

Table 5: Eight Regional Strategies in the South Okanagan Similkameen Regional Community Climate Action Plan.

Eight Regional Strategies (Regional CCAP)	
Strategy 1	Build Energy Efficient Buildings
Strategy 2	Improve Energy Efficiency of Existing Buildings
Strategy 3	Increase Use of Alternative Energy
Strategy 4	Build Energy Efficient Developments
Strategy 5	Improve Alternative Transportation Amenities
Strategy 6	Promote More Efficient Vehicle Use
Strategy 7	Reduce & Divert Waste from Landfills
Strategy 8	Maximize Value from Agricultural Wastes

Estimated greenhouse gas emissions in the RDOS for 2007 are 598,107 tonnes of carbon dioxide equivalent (tCO2e). With a population of 79,475 residents, this is about 7.5 tCO2e per person. The Regional target is a 15 percent reduction in GHG emissions from 2007 levels by 2030[23].

The RDOS and the District of Summerland will continue to work together towards the collective goal of reducing GHG emissions.

2.7 Local Climate Action Planning

In addition to Regional carbon emissions reduction target, the District of Summerland Official Community Plan (OCP), 2008, also sets targets for the reduction of GHG emissions. These targets are:

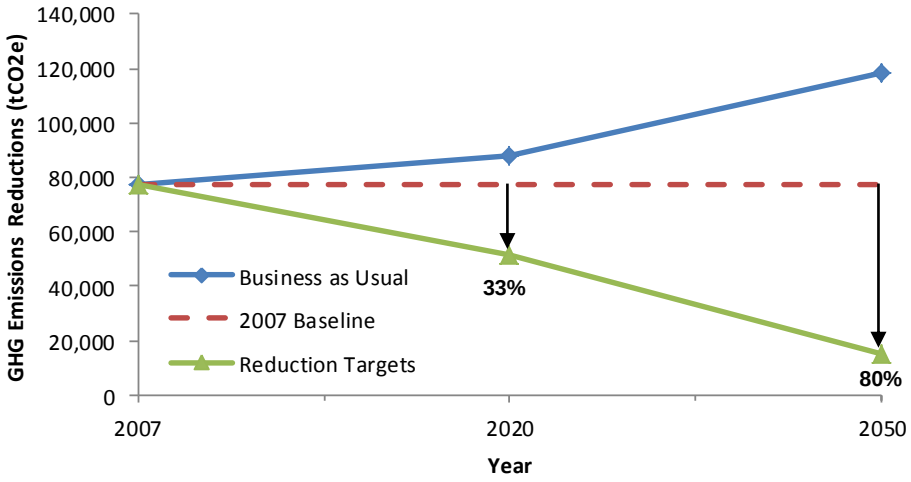
- 33 percent below 2007 levels by 2020; and
- 80 percent below 2007 levels by 2050.

These targets have been set to match the targets adopted by the Government of British Columbia through Bill 44 – 2007 Greenhouse Gas Reductions Targets Act. Committing to reduce greenhouse gas emissions 33 percent below 2007 levels by 2020 is an aggressive target for Summerland, but was the target chosen through the public consultation process.

To reach the emissions reductions targets, by 2020 Summerland must be removing at least 27,437 tonnes of carbon dioxide equivalent (tCO2e) from the atmosphere per year and work up to 61,665 tCO2e yearly by 2050. The graph in Figure 2 illustrates the challenge that lies ahead to reduce greenhouse gas emissions significantly below 2007 levels. The red dashed line shows the 2007 baseline greenhouse gas emissions for Summerland of 77,081 tCO2e[24]. The blue line shows GHG emissions levels if no action is taken (business-as-usual), based on current energy consumption data and a projected population growth of one percent. The green line shows how much GHG emissions need to be reduced to reach our set targets.

[23] Regional District Okanagan-Similkameen (RDOS). South Okanagan Similkameen Regional Community Climate Action Plan. Draft 2011.
[24] BC Ministry of Environment. Community Energy and Emissions Inventory: Reports. *Summerland District Municipality Updated 2007 Community Energy and Emissions Inventory*. June 30, 2010. http://www.env.gov.bc.ca/cas/mitigation/ceei/reports.html.

Figure 2: Comparison of Business-as-usual to GHG Emissions Reduction Targets for Summerland.



3 Baseline Energy and GHG Emissions

This section summarizes the *Summerland District Municipality Updated 2007 Community Energy and Emissions Inventory* (June 30, 2010) compiled by the Province of British Columbia, Ministry of Environment.

3.1 Energy Consumption

Energy consumption within the District of Summerland, in 2007, was over 1.38 million gigajoules (GJ) (See Table 6). This energy consumption resulted in total emissions of 77,081 tonnes of carbon dioxide equivalent (tCO2e)[25]. For a 2007 population of 11,012, this is about 7 tonnes per person per year of greenhouse gas emissions. At current prices, this represents a spending of more than $32.9 million dollars annually or $2,992 dollars per person.

Table 6: Energy Use and GHG Emissions by Energy Type, 2007.

Energy Type	Energy (GJ)	CO2e (tonnes)	Estimated Energy Expenditures
Electricity	351,457	659	$8,586,630.98
Natural Gas	373,515	18,788	$5,668,494.78
Propane	7,107	434	$4,726.16
Wood	35,467	13	Unknown
Heating Oil	4,029	284	$3,791.29
Gasoline	525,223	35,881	$16,251,925.79
Diesel	86,964	6,151	$2,352,349.89
Other Transportation Fuel	4,833	193	$83,891.08
Solid Waste		14,678	Unknown
Total	1,388,595	77,081	$32,951,809.96

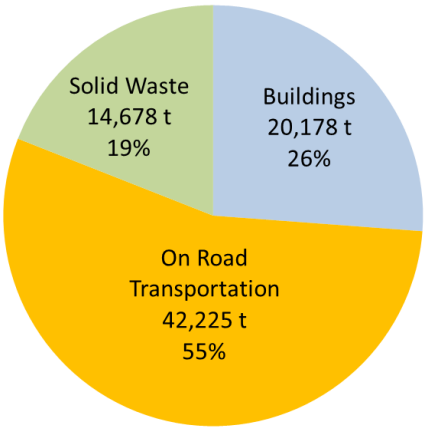
Source: BC Ministry of Environment CEEI Reports, June 30, 2010 for Energy and CO2. Energy expenditures were calculated using **2007 prices of fuel from the following websites: http://www.mjervin.com/ and http://www.terasengas.com/documents/ratestariffs/TerasenGasInc_RateReferenceGuide.pdf**

[25] All energy and GHG emissions data is calculated using both District and CEEI data. Province of BC. Ministry of Environment. Summerland District Municipality Updated 2007 Community Energy and Emissions Inventory (CEEI). June 30, 2010.

3.2 GREENHOUSE GAS EMISSIONS

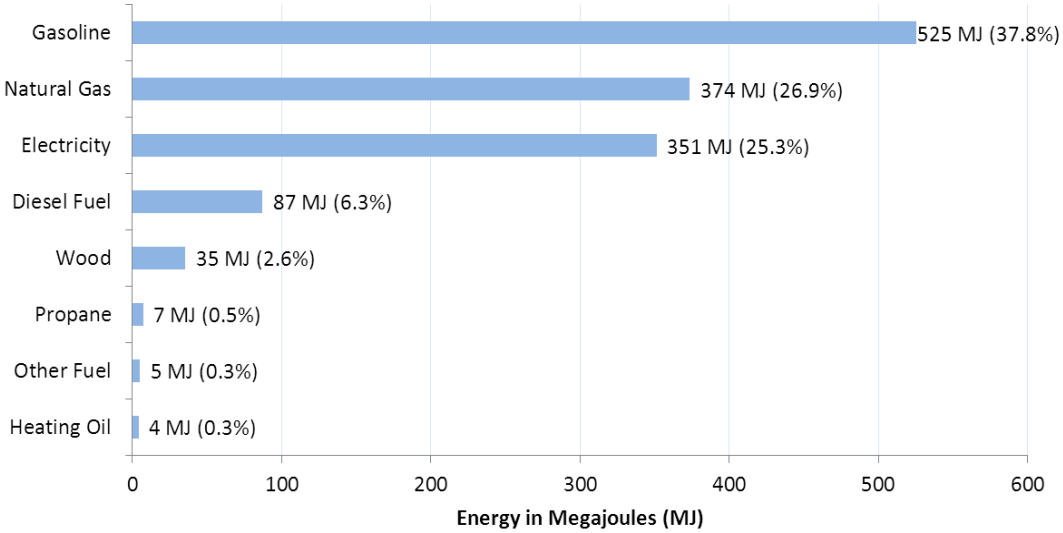
In 2007, Summerland emitted a total of 77,081 tCO2e[26]. Total energy and GHG emissions emitted by the community within the District of Summerland are categorized by sectors such as buildings, on-road transportation, and solid waste (see Figure 3). The on-road transportation percentage is high because of the limited transit service available in Summerland.

Figure 3: Greenhouse Gas Emissions (tCO2e) by Sector for the District of Summerland (2007)



The buildings sector represents the amount of electricity and natural gas delivered to Summerland by major utility companies in British Columbia, not exclusively for buildings. The on-road transportation sector represents the amount of fuel used by on-road vehicles registered in Summerland. Data on the number of vehicles was collected from ICBC, fuel efficiency data from Natural Resources Canada, vehicle kilometres travelled from Statistics Canada, and fuel sales data from Kent Marketing[27]. The solid waste sector includes all municipal solid waste generated within a local government's boundary and disposed of to the landfill[28].

Figure 4: Percentage of Energy Use (MJ) for the District of Summerland (2007)



[26] All energy and GHG emissions data is calculated using both District and CEEI data. Province of BC. Ministry of Environment. Summerland District Municipality Updated 2007 Community Energy and Emissions Inventory (CEEI). June 30, 2010.
[27] HYLA Environmental Services Ltd. (2008, July). *Data Requirements for Community Energy and Emissions Inventories in British Columbia.* Prepared for the BC Provincial Community Energy and Emissions Inventory Working Group. p. 19.
[28] HYLA. p. 7.

3.2.1 District of Summerland Energy & GHG Emissions Profile

Table 7: Energy Use and GHG Emissions for the District of Summerland, 2007. (BC, 2010)[29][30]

Buildings	Type	Consumption	Unit	Energy (GJ)	CO2e (t)	Energy (%)	CO2e(t) (%)	Estimated Energy Expenditures
Residential	Electricity (BC Hydro)	3,675,902	kWh	13,233	91			$321,641.43
	Electricity (DoS)	61,154,227	kWh	220,155	367			$5,503,880.43
	Natural Gas	241,881	GJ	241,881	12,167			$2,646,178.14
	Heating Oil	4,029	GJ	4,029	284			$3,791.29
	Propane	7,107	GJ	7,107	434			$4,726.16
	Wood	35,467	GJ	35,467	13			
				521,872	**13,356**	**37.58%**	**17.33%**	**$8,480,217.44**
Commercial/Small-Medium Industrial	Electricity (BC Hydro)	188,357	kWh	678	5			$16,481.24
	Electricity (DoS)	25,752,221	kWh	92,708	155			$2,317,699.89
	Natural Gas	131,634	GJ	131,634	6,621			$3,022,316.64
				225,020	**6,781**	**16.20%**	**8.80%**	**$5,356,497.77**
Municipal (District of Summerland)	Electricity (DoS)	4,784,254	kWh	17,223	29			$258,830.00
Municipal Streetlights	Electricity (DoS)	2,071,989	kWh	7,459	12			$168,098.00
				24,682	**41**	**1.78%**	**0.05%**	**$426,928.00**
		Electricity		351,457	659			
		Natural Gas		373,515	18,788			
		Propane		7,107	434			
		Wood		35,467	13			
		Heating Oil		4,029	284			
Building Totals		**Buildings:**		**771,575**	**20,178**	**55.57%**	**26.18%**	**$14,263,643.21**

On Road Transportation		Consumption	Unit	Energy (GJ)	CO2e (t)	Energy %	CO2e(t) %	Estimated Energy Expenditures
Small Passenger Cars	Gasoline	2,647,035	litres	92,646	6,331			$2,866,738.91
	Diesel Fuel	126,229	litres	4,835	345			$130,773.24
	Other Fuel	642	litres	25	1			$426.93
				97,506	**6,677**	**7.02%**	**8.66%**	**$2,997,939.08**
Large Passenger Cars	Gasoline	2,819,226	litres	98,673	6,703			$3,053,221.76
	Diesel Fuel	36,637	litres	1,403	100			$37,955.93
	Other Fuel	4,727	litres	181	7			$3,143.46
				100,257	**6,810**	**7.22%**	**8.83%**	**$3,094,321.15**
Light Trucks, Vans, SUVs	Gasoline	9,220,176	litres	322,706	22,099			$9,985,450.61
	Diesel Fuel	848,390	litres	32,493	2,318			$878,932.04
	Other Fuel	99,495	litres	3,811	152			$66,164.18
				359,010	**24,569**	**25.85%**	**31.87%**	**$10,930,546.82**
Commercial Vehicles	Gasoline	110,199	litres	3,857	257			$119,345.52
	Diesel Fuel	227,836	litres	8,726	613			$236,038.10
	Other Fuel	15,784	litres	605	24			$10,496.36
				13,188	**894**	**0.95%**	**1.16%**	**$365,879.97**
Tractor Trailer Trucks	Gasoline	2,380	litres	83	6			$2,577.54
	Diesel Fuel	950,784	litres	36,415	2,558			$985,012.22
	Other Fuel	2,380	litres	91	4			$1,582.70
				36,589	**2,568**	**2.63%**	**3.33%**	**$989,172.46**
Motorhomes	Gasoline	131,414	litres	4,599	307			$142,321.36
	Diesel Fuel	18,205	litres	697	49			$18,860.38
	Other Fuel	1,661	litres	64	3			$1,104.57
				5,360	**359**	**0.39%**	**0.47%**	**$162,286.31**
Motorcycles, Mopeds	Gasoline	70,113	litres	2,454	164			$75,932.38
				2,454	**164**	**0.18%**	**0.21%**	**$75,932.38**
Bus	Gasoline	5,852	litres	205	14			$6,337.72
	Diesel Fuel	62,527	litres	2,395	168			$64,777.97
	Other Fuel	1,463	litres	56	2			$972.90
				2,656	**184**	**0.19%**	**0.24%**	**$72,088.58**
			Gasoline:	525,223	35,881			
			Diesel:	86,964	6,151			
			Other Fuel:	4,833	193			
			All Fuels:	**617,020**	**42,225**	**44.43%**	**54.78%**	**$18,688,166.75**

Solid Waste	Mass (t)	CO2e (t)	Energy %	CO2e(t) %
Community Solid Waste	15,623	14,678	0.00%	19.04%

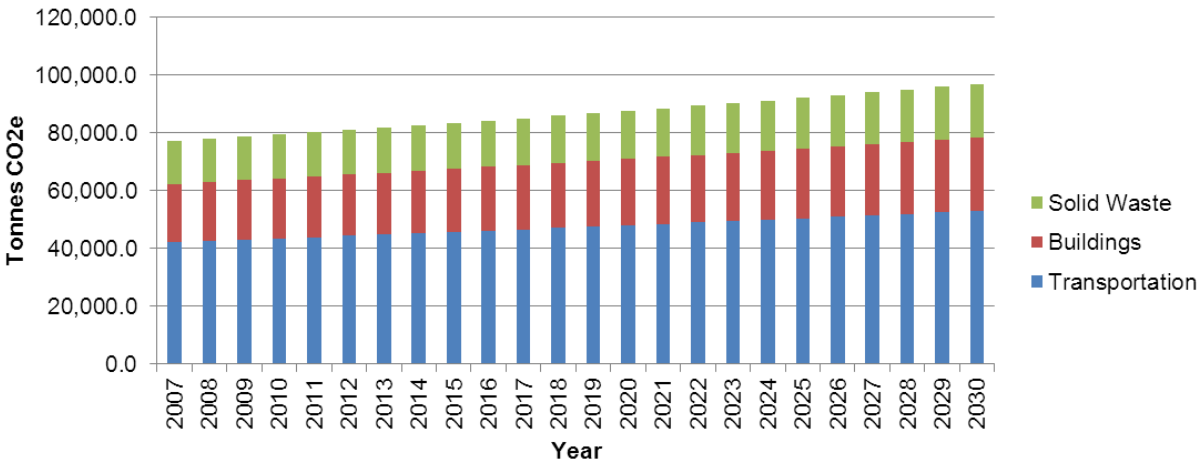
Grand Total of Transportation / Buildings / Solid Waste:	1,388,595	77,081	100.00%	100.00%	$32,951,809.96

[29] BC Ministry of Environment. 2010. *Summerland District Municipality Updated 2007 Community Energy and Emissions Inventory.* June 30, 2010.
[30] Energy expenditures were estimated based on average 2007 costs for each energy type in Kelowna.

3.3 Simple Growth Forecast

The figure below forecasts emissions by sector to the year 2030 using a simple growth scenario. A simple growth scenario assumes emissions will increase with population and that there will be no intervention from government or the private sector to address climate change. This is a hypothetical scenario that forecasts Summerland's GHG emissions reaching 96,904 tonnes of CO2e by 2039 if we continue, business-as-usual, without any new technology or taking any action to mitigate Climate Change.

Figure 5: Simple Growth Forecast for GHG emissions for the District of Summerland by Sector 2007 to 2030.[31]



[31] Annual sector emissions are calculated by multiplying 2007 emissions by the forecast 1% population growth rate for each year.

4 Taking Climate Action

This section of the Plan outlines each goal as set out in the Official Community Plan (OCP), each initiative under each goal, and each action under each initiative. Each action has a section for description, timeframe, responsibility, costs and comments. There are four categories under timeframe: short-term, medium-term, long-term, or ongoing. All of the timeframes are considered to start upon Council adoption of the Community Climate Action Plan (CCAP). Short-term refers to actions that should be complete in less than two years. Medium-term refers to actions that should be complete in less than five years. Long-term refers to actions that might not be complete before five years. Ongoing refers to actions that will be considered at any time.

The responsibility section refers to the District Department that will be responsible for implementing the action. Many actions have more than one department listed as being responsible. The first department listed is the one responsible for the action and the second department listed should be consulted.

Costs are difficult to speculate with accuracy, especially when actions are three to five or more years in the future. Any dollar value assigned to an action is an estimate. Most of the actions are undeveloped ideas that need further research to provide accurate cost estimates and timelines before deciding if the action is feasible and can be successfully implemented. Any implemented action must meet the climate action goals and move Summerland towards meeting their greenhouse gas reduction targets.

4.1 Plan Goals to Address Climate Change

Summerland's Community Climate Action Plan is guided by goals set out in the Official Community Plan. These Official Community Plan Goals to address Climate Change are as follows:

Goal #1: Minimize urban sprawl and promote compact, energy-efficient development with access to amenities within walking and cycling distance.

Goal #2: Improve transportation efficiency.

Goal #3: Support public participation, education and awareness initiatives.

Goal #4: Identify and support effective greenhouse gas reduction initiatives.

Goal #5: Promote energy conservation and dissemination of renewable energy technologies.

Goal #6: Maintain and enhance the urban ecosystem.

Goal #7: Demonstrate Municipal leadership.

4.2 Initiatives and Actions

Goal #1: Minimize urban sprawl and promote compact, energy-efficient development with access to amenities within walking and cycling distance.

Initiative 1-1: Support initiatives that promote compact development and minimize urban sprawl.
Initiative 1-2: Incorporate energy efficiency into planning documents and processes.
Initiative 1-3: Improve the energy efficiency of buildings.

Goal #2: Improve transportation efficiency.

Initiative 2-1: Improve and/or provide transit service between communities and within Summerland.
Initiative 2-2: Support transportation alternatives and infrastructure that leads to the reduction of greenhouse gas emissions.
Initiative 2-3: Support initiatives that target the transformation of transportation habits.

Goal #3: Support public participation, education and awareness initiatives.

Initiative 3-1: Communicate with the public regarding climate action.
Initiative 3-2: Support the offering of climate-related courses or workshops to the public through the Summerland Recreation Guide.

Goal #4: Identify and support effective greenhouse gas reduction initiatives.

Initiative 4-1: Support initiatives that reduce and divert solid waste from the landfill.
Initiative 4-2: Enhance existing solid waste management processes and practices.

Goal #5: Promote energy conservation and dissemination of renewable energy technologies.

Initiative 5-1: Encourage energy conservation in buildings.
Initiative 5-2: Support the development and utilization of renewable energy sources.

Goal #6: Maintain and enhance the urban ecosystem.

Initiative 6-1: Encourage and support local food production and distribution.
Initiative 6-2: Incorporate policy into planning documents that enhances the proliferation of trees and vegetation.

Goal #7: Demonstrate Municipal leadership.

Initiative 7-1: Support the collection of data for Community Energy and Emissions Inventory Reports.
Initiative 7-2: Support Summerland's Climate Action Fund.
Initiative 7-3: Improve energy efficiency of municipally owned and operated buildings.
Initiative 7-4: Support green economic development initiatives.
Initiative 7-5: Support water conservation initiatives.
Initiative 7-6: Support initiatives to enhance air quality

4.2.1 Goal 1: Minimize urban sprawl and promote compact, energy-efficient development with access to amenities within walking and cycling distance.

Description

Summerland's Official Community Plan emphasizes the importance of a healthy community consistent with Smart Growth principles which encourage compact, mixed-use neighbourhoods. A pattern of development that can reduce greenhouse gas emissions is one that allows people to make more trips by foot or bicycle. This includes directing development in core areas with existing infrastructure to reduce urban sprawl and encouraging diverse, energy-efficient, housing opportunities.

Initiatives and Actions

Initiative 1-1	**Support initiatives that promote compact development and minimize urban sprawl.**
Action 1-11	**Support the trading of ALR land within 800 metres or about a 10 minute walk of downtown with land in the periphery if additional development land is required.**
Timeframe	Ongoing
Description	This should only be considered if all other land in the downtown core and within 800 metres or a 10 minute walk vicinity has been intensified.
Responsibility	Development Services Department
Cost	Staff time
Comments	
Action 1-12	**Review Official Community Plan and Land Use Map to limit urban sprawl and promote smart growth. This may include guiding growth in nodes and along corridors and in areas where there is municipal sewer. Refine the UGA (urban growth area).**
Timeframe	Short-term
Description	
Responsibility	Development Services Department
Cost	$50,000 but there may be some grant money available for this study
Comments	

Initiative 1-2	**Incorporate energy efficiency into planning documents and processes.**
Action 1-21	**Increase densities in the 1999 Zoning Bylaw.**
Timeframe	Short-term
Description	The zoning bylaw is being reviewed and should be updated in 2011 to increase densities.
Responsibility	Development Services Department
Cost	Already paid for.
Comments	
Action 1-22	**Prepare a sustainable development checklist to be used during the development application process.**
Timeframe	Short-term
Description	This would provide education to developers and hopefully result in more energy-efficient development. It could encourage green space, green roofs, and water efficiency. A Sustainability Checklist could be prepared in-house and based on existing checklists in the RGS and the DCC Bylaw for the City of Penticton.
Responsibility	Development Services Department
Cost	Staff time
Comments	Work in cooperation with the Development Community to create a checklist that is comprehensive.

Initiative 1-2	**Incorporate energy efficiency into planning documents and processes.** Continued…
Action 1-23	**Consider reviewing the Development Cost Charges Bylaw, Fees and Charges Bylaw, and the Procedures Bylaw to ensure that the regulations are promoting energy-efficient, compact development and not urban sprawl.**
Timeframe	Short-term
Description	
Responsibility	Development Services Department / Administration Department
Cost	Staff time
Comments	
Action 1-24	**Consider Investigating changes to the Fees & Charges Bylaw regarding the electric heating installation charge.**
Timeframe	Short-term
Description	For people building or renovating, this bylaw discourages the installation of electric heat over natural gas, when electricity from hydro is more environmentally friendly.
Responsibility	Summerland Power/Administration/Development Services Departments
Cost	Staff time
Comments	
Action 1-25	**Review the suitability of creating a development permit area (DPA) for sustainable development.**
Timeframe	Medium-term
Description	The Local Government Act currently provides that an official community plan may designate areas for ecological protection, revitalization, form and character, energy and water conservation, and greenhouse gas reduction. This is the main tool for articulating how development and design shall meet expectations for smart land use and climate change action at a site or neighbourhood level.
Responsibility	Development Services Department
Cost	Staff time
Comments	
Action 1-26	**Consider preparing a Downtown Plan that includes opportunities for sustainability.**
Timeframe	Long-term
Description	Currently the DoS does not have a Downtown Plan, but they have Downtown Design Guidelines. A Downtown Plan would re-evaluate existing land uses, heights, densities and direct growth in a sustainable way.
Responsibility	Development Services Department
Cost	If done in-house it would only be staff time, but to hire a consultant might cost approximately $25,000.
Comments	
Action 1-27	**Consider preparing a Transit Plan with maps of proposed routes and coordinated with growth nodes and corridors.**
Timeframe	Long-term
Description	The 2008 DoS Transportation Master Plan has a preliminary concept for public transit in Summerland. However, there is a need for a more specific Transit Plan that shows nodes and corridors. This is necessary so that Summerland can plan growth nodes and preserve land for future bus stops.
Responsibility	Engineering and Public Works / Development Services
Cost	$50,000
Comments	

Initiative 1-2	**Incorporate energy efficiency into planning documents and processes.** Continued…
Action 1-28	**Consider rewriting the Official Community Plan to integrate land use, transportation, and energy planning into one document.**
Timeframe	Long-term
Description	Development Services Department
Responsibility	The OCP was updated in 2008 and should be revisited every 10 years. Since land-use, transportation, and energy planning are interconnected, the next Official Community Plan re-write should integrate these concepts into one document. When this is done, there should be extensive public involvement.
Cost	An estimate of $100,000 for writing a new Official Community that also integrates transportation and energy planning into one document.
Comments	

Initiative 1-3	**Improve the energy efficiency of buildings.**
Action 1-31	**Development Services staff will provide current sustainability information and promote incentive programs to people who make inquiries and/or take a Building Permit Application.**
Timeframe	Short-term/Ongoing
Description	A member of the Development Services staff will research current incentives and create an information sheet that can be attached to permit applications. All staff will need to be up-to-date on this information so that they can relay the information to customers at the counter.
Responsibility	Development Services Department
Cost	Staff time and office supplies.
Comments	
Action 1-32	**Consider exploring an incentive based permit fee where fees decrease as sustainability features increase.**
Timeframe	Short-term
Description	A sustainability evaluation tool would be used to evaluate a project. During the next fee review, a graduated permit fee system based on sustainability could be created.
Responsibility	Development Services Department
Cost	Staff time
Comments	The development industry should be consulted regarding the price structure and the evaluation tool.
Action 1-33	**Request a Home Energy Audit with applications for new buildings or major renovations. This home energy rating will be put into the Municipal system (GIS database) attached to the property.**
Timeframe	Short-term
Description	To qualify for energy rebates, homeowners must have two home energy audits completed; one before work is done and then one after. There may be subsidies for the homeowner's first home energy audit. For a homeowner doing major renovations, they would have to bring in the results of the first blower door test prior to being given a permit. For new home owners, they would have to have an energy audit completed once the home is complete. They would bring the report in to the Development Services Office after final inspection
Responsibility	Development Services Department
Cost	$200 for each energy audit
Comments	This is already an action in the OCP.

Initiative 1-3	**Improve the energy efficiency of buildings.** Continued…
Action 1-34	**Support the continuation of the Green Cents program, or equivalent, and its evolution to provide "green certification" for businesses to show their sustainability initiatives while reducing greenhouse gas emissions.**
Timeframe	Medium-term/Ongoing
Description	The Green Cents Project is a regional initiative to promote sustainable business practices while helping small businesses save money. An Environmental Auditor assesses energy use for a specific business, then goes to physically assess the building and talk to the owner/renter. Suggestions are given and information provided to the business owner.
Responsibility	RDOS, Fortis, OBWB / Development Services Department
Cost	None
Comments	Funding for this Program finished in February 2011.
Action 1-35	**Encourage individual metering of utilities in multi-unit residences.**
Timeframe	Long-term
Description	Most multi-unit residential buildings have separate electrical meters, but they should also have separate water and if possible gas meters. Having individual meters offers personal responsibility for consumption.
Responsibility	Development Services Department
Cost	Additional meters would mean additional cost for the developer. There may be additional costs to the Municipality for upkeep and maybe replacement.
Comments	If there is a shared boiler that requires natural gas, there would only be a need for one meter.

4.2.2 Goal 2: Improve transportation efficiency.

Description

In 2007, on-road transportation accounted for 55 percent of total Summerland GHG emissions. With this goal, GHG emissions reductions will be achieved by shifting some trips made by automobile to alternative modes of transportation such as transit, walking, and cycling. Reductions in GHG emissions can also be made by providing information to promote smart driving, anti-idling, and energy-efficient vehicle choices.

Initiatives and Actions

Initiative 2-1	**Improve and/or provide transit service between communities and within Summerland.**
Action 2-11	**Support private transit options.**
Timeframe	Ongoing
Description	Transit systems work with private contractors to develop and operate bus or rail services as well as enhance or deliver other aspects of their operation including customer information, passenger shelters, advertising management, facility management, fleet maintenance, and advanced technologies for monitoring and improving operations.
Responsibility	Engineering and Public Works / Development Services Department
Cost	None
Comments	The operation of British Columbia's Whistler and Valley Express (WAVE) transit service is contracted out to a private company.
Action 2-12	**Lobby BC Transit for better transit service and consider regional partnerships to improve transit service.**
Timeframe	Ongoing
Description	Continue discussions with the RDOS and BC Transit to move towards a regional transit scheme.
Responsibility	Administration / Development Services Department
Cost	None
Comments	In theory, public-private partnerships offer several benefits to municipalities: they can reduce costs, open up new funding sources, implement projects faster by taking processes out of the public realm, and transfer risk to the private sector.

Initiative 2-2	**Support transportation alternatives and infrastructure that leads to the reduction of greenhouse gas emissions.**
Action 2-21	**Consider improving pedestrian and cycling infrastructure. This includes more multi-use trails that are connected to a trail network. All collector road re-construction should consider the inclusion of bicycle lanes and sidewalks.**
Timeframe	Ongoing
Description	The 2008 Transportation Master Plan has a concept for Summerland's Bicycle and Trail Network along with recommended primary routes for bicycle lanes.
Responsibility	Engineering and Public Works / Development Services Department
Cost	Estimated costs are outlined for specific routes in the TMP
Comments	
Action 2-22	**Provide information on transportation alternatives (electric assist bicycles) and communicate the lifestyle and financial benefits of public transit and active transportation.**
Timeframe	Short-term/Ongoing
Description	This could be done in the form of a specific brochure or as tips in the newsletter.
Responsibility	Administration in cooperation with E & PW and Development Services Department
Cost	Staff time and possibly $1500 for brochure printing
Comments	
Action 2-23	**Encourage strata buildings to provide co-op vehicles to allow for parking reductions.**
Timeframe	Short-term
Description	This could be encouraged by the Development Services staff when dealing with a developer.
Responsibility	Development Services Department
Cost	None
Comments	
Action 2-24	**Investigate the construction of a multi-use trail between Lower Town and Trout Creek.**
Timeframe	Short-term
Description	Future multi-use trail routes are detailed in the Transportation Master Plan and one missing link is the Lakeshore Drive to Trout Creek connection running parallel to Lake Okanagan and adjacent to Highway 97.
Responsibility	Development Services Department
Cost	A feasibility study might cost between $25,000 to $50,000
Comments	A feasibility study may be prepared in 2011.
Action 2-25	**Consider providing adequate and accessible bicycle parking at all Municipal facilities.**
Timeframe	Medium-term
Description	Bicycle parking should be available and easily accessible from the Municipal building entrance.
Responsibility	Administration Department / Development Services Department
Cost	Depends on number of existing bicycle racks and their location. One bike rack can cost between $350 and $500.
Comments	
Action 2-26	**Support a bicycle co-op; organizations where volunteers teach people how to ride, fix, and build bicycles for free or cost recovery.**
Timeframe	Medium-term
Description	A non-profit society could be started by community members to support the bicycle as a healthy and ecologically-sound mode of everyday urban travel. Volunteers could teach people how to do maintenance and repairs. Bicycles could be donated and sold to cover costs.
Responsibility	Administration / Development Services Department
Cost	None
Comments	

Initiative 2-2	**Support transportation alternatives and infrastructure that leads to the reduction of greenhouse gas emissions.** Continued…
Action 2-27	**Promote amenities for electric vehicles and micro vehicles.**
Timeframe	Long-term
Description	An amenity might be priority parking or parking in the shade of a tree or providing parking that only fits a micro-vehicle. It may include parking stalls for energy-efficient vehicles that include pay electric charging stations.
Responsibility	Development Services Department
Cost	None
Comments	The Zoning Bylaw Review is looking at ways to accommodate the provision of alternate-fuelled vehicles.
Action 2-28	**Consider developing a strategy for electric vehicle charging stations (pay per kWh) in core areas of Summerland.**
Timeframe	Long-term
Description	Providing charging stations for electric vehicles would bring these vehicles and people into Summerland, boosting the local economy.
Responsibility	Development Services Department
Cost	Cost per station is approximately $7800 USD.
Comments	One company might have a monopoly on EV charging stations across North America.

Initiative 2-3	**Support initiatives that target the transformation of transportation habits.**
Action 2-31	**Support a regional carpool initiative.**
Timeframe	Short-term/Ongoing
Description	Carpool.ca offers free carpooling services to commuters in partnership with employers, post-secondary institutions, and regional governments. Carpool.ca relies on partners to keep the program going. Partners pay an annual subscription fee that includes a menu of services. Kelowna, Vernon, and Kamloops are members. For our commuters to be able to use this service, we would have to become a partner as well as Municipalities where people would be commuting to and from.
Responsibility	Administration Department / Development Services Department
Cost	Approximately $2000 - $3000 per year for all the member municipalities in the South Okanagan.
Comments	Possible partnership between the RDOS, City of Penticton, Osoyoos, Oliver, Summerland, Peachland, Okanagan College, Regional Health Authority, etc.
Action 2-32	**Support and participate in Bike to Work Week and Car-Free Day programs.**
Timeframe	Short-term/Ongoing
Description	Bike to Work's mandate is to encourage and promote the use of the bicycle as transportation to work. In the Thompson/Okanagan region, Bike to Work Week is May 10 to 16, 2011. In 2010, Penticton had 63 teams registered with 377 cyclists biking to work. World Car Free Day is every September 22, where people from around the world gather to remind the world that we don't have to accept our car-dominated society.
Responsibility	All Departments
Cost	None
Comments	
Action 2-33	**Consider providing anti-idling signage for the downtown core.**
Timeframe	Short-term
Description	The signs would be there to encourage people not to idle needlessly.
Responsibility	Engineering and Public Works Department
Cost	Signs might cost $1000 - $2000 plus staff time to install them.
Comments	The signs are not there to enforce a bylaw, but to encourage good behaviour.

Initiative 2-3	**Support initiatives that target the transformation of transportation habits.** Continued…
Action 2-34	**Consider a pilot project that follows the transportation habits of a few families in Summerland over one month. Then provide them with tools like carpool.ca and motor assist bicycles for one month and see if they were able to reduce their vehicle use.**
Timeframe	Medium-term
Description	This Pilot Project would be highly publicized and educational for the families and the community. It wouldn't cost much, but it would be the publicity and educational component that would be the benefit. It could be done leading up to Bike to Work Week.
Responsibility	Development Services Department
Cost	Depends on the structure of the Pilot Project.
Comments	
Action 2-35	**Provide "Smart-Driver" tips to residents to help them reduce their fuel consumption and GHG emissions.**
Timeframe	Medium-term
Description	NRCAN provides course material for the SmartDriver in the City course. The course is for fleets that operate within a 100 km radius of their head office. It has been designed to make fleets more fuel-efficient, reduce business costs, protect the environment and provide defensive driving techniques. This course has been designed with adult learning in mind and the information can be delivered as a training session or tips. Tips could be put in the newsletter.
Responsibility	Administration Department / Development Services Department
Cost	Staff time
Comments	

4.2.3 Goal 3: Support public participation, education and awareness initiatives.

Description

To promote a more sustainable future for Summerland, it is essential to know how to encourage residents to adopt more sustainable behaviour. A commonly used strategy for those who promote sustainability is Community-Based Social Marketing. Research in this type of marketing "indicates that initiatives to promote behaviour change are often most effective when they are carried out at the community level and involve direct contact with people"[32]. Therefore, the success of this Community Climate Action Plan requires a focus on public participation, education, and raising awareness. Involving members of the community will nurture support for the Plan and increase participation in the various climate action initiatives.

Changing behaviour can be a challenging process that needs a strategic approach. This is why there is a short-term action, 2-12, to prepare a Communications Plan for climate action. A Communications Plan will outline the strategic approach to initiating many of the other actions.

Initiatives and Actions

Initiative 3-1	**Communicate with the public regarding climate action.**
Action 3-11	**Consider posting sustainability information on the District of Summerland website.**
Timeframe	Short-term/Ongoing
Description	Provide information on a web page.
Responsibility	Administration Department / Development Services Department
Cost	Staff time.
Comments	

[32] McKenzie-Mohr, Doug. *Fostering Sustainable Behavior: Community-Based Social Marketing.* p. 1. Accessed January 11, 2011. http://www.cbsm.com/.

Initiative 3-1	**Communicate with the public regarding climate action.** Continued…
Action 3-12	**Consider preparing a Communications Plan to address education and outreach for Summerland's Climate Action Plan.**
Timeframe	Short-term
Description	A Communications Plan for Climate Action would help with implementing the actions. The DoS would have to either hire a consultant to prepare a Communications Plan or have this as part of the job description of an employee.
Responsibility	Administration Department / Development Services Department
Cost	Unknown
Comments	
Action 3-13	**Form a Climate Action Working Group to work with staff to increase community awareness and aide in Plan implementation.**
Timeframe	Short-term
Description	This group will work with staff to increase community awareness and aide in implementation. This would ensure that actions in the Climate Action Plan were followed-through on. The DoS would choose Group members consisting of members of the community and employees of the DoS.
Responsibility	Development Services Department
Cost	Staff time.
Comments	There would need to be a chair person to organize the meetings and agendas.
Action 3-14	**Consider collaborating with the RDOS to develop a Sustainable South Okanagan Website with information, blog, and possibly a re-use trading site.**
Timeframe	Medium-term/Ongoing
Description	Rather than each South Okanagan Municipality providing information on their respective web sites, one central location would be more efficient.
Responsibility	Development Services Department and RDOS
Cost	Unknown
Comments	

Initiative 3-2	**Support the offering of climate-related courses or workshops to the public through the Summerland Recreation Guide.**
Action 3-21	**Support the offering of a xeriscaping course.**
Timeframe	Medium-term
Description	There are courses being offered through Okanagan College. We could promote these courses or bring the teacher in and offer a special course in Summerland.
Responsibility	Parks Department / Development Services Department
Cost	None
Comments	
Action 3-22	**Support the offering of water conservation and/or drip irrigation courses.**
Timeframe	Medium-term
Description	There may be a DoS employee that could offer a workshop on this or a qualified member of the public. The DoS should be willing to accommodate people willing to teach these courses and put the course information in the Recreation Guide.
Responsibility	Parks Department / Development Services Department
Cost	Staff time
Comments	

4.2.4 Goal 4: Identify and support effective greenhouse gas reduction initiatives.

Description

In Summerland, approximately 19 percent of community greenhouse gas (GHG) emissions come from Municipal solid waste. To meet Goal 1, Summerland will support initiatives that reduce the amount of solid waste sent to the landfill thereby reducing GHG emissions. The initiatives and actions described below focus on areas where the District of Summerland has influence.

Initiatives and Actions

Initiative 4-1	**Support Initiatives that reduce and divert solid waste from the landfill.**
Action 4-11	**Promote the Canada Post Red Dot Campaign to reduce junk mail.**
Timeframe	Ongoing
Description	Canada Post has eco-friendly consumer choice options that reduce waste. People just need to put a "No Admail" or "No Junk Mail" sign on their mailbox. The Consumer Choice database is decremented for each person opting out, and advertisers reduce their print quantities accordingly. The DoS[33] could provide this information to people in the Newsletter.
Responsibility	Administration Department / Development Services Department
Cost	No additional cost to put this in our newsletter.
Comments	People don't need to purchase a RedDot, but it is a good campaign.
Action 4-12	**Encourage anaerobic digestion opportunities for orchards, wineries & breweries.**
Timeframe	Ongoing
Description	Anaerobic digestion of wine vinasses is widespread in the world. Wineries, distilleries, and breweries are staring to use/treat their wastewater to create methane. The DoS should support applicants who are interested in anaerobic digestion for their winery/brewery/distillation process.
Responsibility	Engineering and Public Works Department / Development Services Department
Cost	No cost to the Municipality.
Comments	This may not be feasible for small wineries, but if the wineries collaborated in a project, there is potential.
Action 4-13	**Consider hosting a District-wide garage sale to encourage reuse and recycling.**
Timeframe	Short-term
Description	In the past, Summerland has hosted a community-wide garage sale. This could be done again. It could also be change to a different format such as people renting a table at the arena to sell their items or have a tailgate sale.
Responsibility	Administration Department / Development Services Department
Cost	Staff time and advertising.
Comments	This could be either very simple or more involved depending on DoS resources.
Action 4-14	**Work with the private sector to increase the diversion of construction and demolition materials from the landfill.**
Timeframe	Medium-term
Description	Currently demolition material, gypsum board, concrete and masonry are subject to tipping fees. Some landfills accept separated construction materials such as unpainted drywall, unpainted wood, metals, asphalt shingles, etc. at a reduced fee.
Responsibility	Engineering and Public Works Department / Development Services Department
Cost	Unknown
Comments	

[33] DoS is the abbreviation for District of Summerland.

Initiative 4-1	**Support Initiatives that reduce and divert solid waste from the landfill.** Continued…
Action 4-15	**Work with the business community to reduce the use of plastic bags and increase the use of cloth bags for purchases.**
Timeframe	Long-term
Description	DoS could encourage businesses to try different methods to reduce the use of plastic bags. This might include charging for plastic bags or there could be a system where there is a bin of cloth bags for people to take one and leave one, so that if you forget your cloth bag, you can borrow one from the bin and then bring it back another time (the honor system).
Responsibility	Climate Action Committee / Development Services Department
Cost	None
Comments	This might put the burden on the businesses to comply and we wouldn't want owners to lose business.

Initiative 4-2	**Enhance existing solid waste management processes and practices.**
Action 4-21	**Investigate alternative ways to charge for garbage. This may include implementing a one-bag limit on garbage or going from a flat-rate system to a pay-per-use system.**
Timeframe	Long-term
Description	Currently, a flat rate is charged for garbage pick-up and residents have the option of purchasing bag tags for more than two bags of Garbage. DoS should consider reducing the bag limit to one bag OR replacing the current flat-rate garbage billing system with a charge per bag of garbage.
Responsibility	Engineering and Public Works Department / Development Services Department
Cost	This might not cost DoS more money.
Comments	The RFP for the collection of garbage, compostable materials, and large items and collection, processing and marketing of recyclable material was awarded in 2011 for a 5-year term.
Action 4-22	**Consider disseminating recycling/waste bins throughout the community. These bins separate garbage and recycling and are placed in public areas like downtown, parks, arenas, etc.**
Timeframe	Medium-term
Description	The DoS could manage a program where businesses sponsor a BIN (garbage, paper, can/bottles) in a public place. The Program could start with just a few bins in public/municipal facilities like the arena, pool, and City Hall. Money could be made back through the sponsorship and from returning the bottles/cans. The cost would come from having someone to take away the garbage and recycling.
Responsibility	Parks Department / Development Services Department
Cost	It depends on how much we would charge a business to sponsor a garbage/recycle bin. We might be able to recover costs.
Comments	Offering a program like this would show leadership and cost the DoS very little.
Action 4-23	**Research the feasibility of a Municipal RE-USE IT location where people can bring building materials that have reuse value.**
Timeframe	Medium-term
Description	If there is space at the Landfill, the DoS could let people leave and take items with reuse value.
Responsibility	Engineering and Public Works Department / Development Services Department
Cost	We would only need to supply some space. Because people are just leaving and taking free items, there is no need for administration.
Comments	

Initiative 4-2	**Enhance existing solid waste management processes and practices.** Continued…
Action 4-24	**Consider providing glass pick-up or recycling if it is viable. Even if it is just a bin somewhere or pick-up once a month.**
Timeframe	Long-term
Description	The DoS could implement a system for recycling glass. If there is no market for glass, it could be used for fill and if there is a market, it could be sold for a profit.
Responsibility	Engineering and Public Works Department / Development Services Department
Cost	Unknown
Comments	Neighbouring municipalities offer glass recycling even if it does go to OK Falls to be used as fill.
Action 4-25	**Investigate a commercial recycling program for Summerland businesses.**
Timeframe	Long-term
Description	Currently, the DoS does not provide this service to businesses.
Responsibility	Engineering and Public Works Department / Development Services Department
Cost	This would cost us more, but the costs could be recovered by charging the businesses.
Comments	Businesses hire independent garbage services. If the DoS offered this service it might put some people out of work.

4.2.5 Goal 5: Promote energy conservation and dissemination of renewable energy technologies.

Description

Most electricity in British Columbia is generated from hydro, which is a form of renewable energy that produces no direct waste. Hydroelectricity also produces a lot less greenhouse gas emissions than power generated from fossil fuels. The District of Summerland owns and operates an electrical utility company called Summerland Power and purchases bulk power from Fortis.

The 2008 Summerland Electrical Master Plan distinguishes between "two components of electricity: demand and consumption"[34]. "Demand is the peak electricity required at one time expressed in kilowatts (KW). Consumption or energy is the electrical usage over time expressed as kilowatt-hours" (kWh)[35]. Summerland is expecting growth in peak demand which will require electrical infrastructure upgrades.

The actions in this section target the reduction of Summerland's peak energy and consumption as well as supporting the development of renewable energy sources. Reducing peak energy demand in Summerland could have multiple benefits such as saving higher demand charges from Fortis, reducing the need for system expansion, and increasing system stability during peak demand periods.

Renewable energy is energy that comes from sources that are renewable such as sunlight, water, wind, and geothermal heat. By supporting renewable energy projects, the District of Summerland could reduce its dependence on Fortis and try to insulate customers from price increases and possibly electricity shortages. Also, supporting local renewable energy projects will keep energy dollars in the local economy.

[34] District of Summerland. September 2008. Summerland Electrical Master Plan 2008. p. 7.
[35] District of Summerland. September 2008. Summerland Electrical Master Plan 2008. p. 7.

Initiatives and Actions

Initiative 5-1	Encourage energy conservation in buildings.
Action 5-11	**Consider implementing a time-of-use energy consumption education program and make home energy monitors available to customers, for a limited time to educate them on usage.**
Timeframe	Medium-term
Description	Time of Use electricity monitoring determines electricity usage any time during the day. Typically the production cost of electricity is highest during the daytime peak usage period, and low during the night, when usage is low. Shifting energy usage to off-peak hours would save the DoS peak demand costs.
Responsibility	Summerland Power / Development Services Department
Cost	Monitors can cost between $100 and $200
Comments	

Initiative 5-2	Support the development and utilization of renewable energy sources.
Action 5-21	**Consider new technologies and/or partnerships that reduce peak energy demand, generate renewable energy, or reduce energy consumption.**
Timeframe	Ongoing
Description	If a resident or business owner approaches the District with an innovative idea to reduce GHG emissions, staff should work to help these individuals.
Responsibility	All Departments and staff
Cost	Staff time
Comments	
Action 5-22	**Consider regulations for wind turbines in the Zoning Bylaw.**
Timeframe	Short-term
Description	There are different types and sizes of wind turbines that people might want to install for their home. The DoS should have regulations to deal with these. This is being reviewed in the Zoning Bylaw Review and should be changed in 2011.
Responsibility	Development Services Department
Cost	Included in cost of zoning bylaw review
Comments	
Action 5-23	**Consider a program that makes Smart Meters available to customers who are either interested in producing on-site renewable energy or interested in time-of-use data. Also make available a guide outlining the standards and procedures.**
Timeframe	Medium-term
Description	Smart meters could be available for free for the first few customers generating renewable energy.
Responsibility	Engineering and Public Works / Summerland Power / Development Services Department
Cost	Unknown
Comments	
Action 5-24	**Investigate opportunities for alternative renewable energy generation (geothermal, wind farms, micro-hydro on creeks).**
Timeframe	Long-term
Description	Renewable energy for Summerland Power could reduce dependence on Fortis. A renewable energy study could provide information such as cost/benefit analysis, implications to the environment, implementation, and GHG emissions reduction estimates. The finished study could allow us to take advantage of grants for renewable energy generation.
Responsibility	Administration / Summerland Power / Development Services Department
Cost	Unknown
Comments	

Initiative 5-2	**Support the development and utilization of renewable energy sources.** Continued…
Action 5-25	**Investigate opportunities for district energy and/or lake cooling.**
Timeframe	Long-term
Description	If the DoS were looking to expand and diversify their Municipal utility, District Energy and/or Lake Cooling should be investigated. A feasibility study would need to be completed first.
Responsibility	Administration / Summerland Power / Development Services Department
Cost	Unknown
Comments	
Action 5-26	**Consider preparing a Plan to move towards a Smart Grid.**
Timeframe	Long-term - Over the next 25 years
Description	The basic concept of Smart Grid is to add monitoring, analysis, control, and communication capabilities to the electrical delivery system to maximize the throughput of the system while reducing the energy consumption. The smart grid is made possible by applying sensing, measurement and control devices with two-way communications to electricity production, transmission, distribution and consumption parts of the power grid that communicate information about grid condition to system users, operators and automated devices, making it possible to dynamically respond to changes in grid condition.
Responsibility	Summerland Power / Development Services Department
Cost	Depends on the extent of the system.
Comments	

4.2.6 Goal 6: Maintain and enhance the urban ecosystem.

Description

The aim of this goal is to reduce GHG emissions by increasing carbon sinks through encouraging more trees and vegetation in the community. An energy and emissions inventory, reports the sources of greenhouse gas emissions (fuel combustion) and removal of GHG emissions by sinks (plants and trees) for an identified area over a specified period of time. A carbon sink absorbs carbon dioxide from the atmosphere. Currently, the BC Ministry of Environment CEEI reports calculate carbon sinks at the Regional level[36]. Future CEEI reports may consider counting tree canopy cover at the municipal level. The District of Summerland can improve tree canopy cover (sinks) by supporting the planting of more trees.

Initiatives and Actions

Initiative 6-1	**Encourage and support local food production and distribution.**
Action 6-11	**Support the creation of a local food map like a tourist map that locates local food suppliers such as local fruit, wine, eggs, chickens, etc.**
Timeframe	Short-term
Description	A local food map is a direct marketing tool for farms in Summerland. A local food map would showcase local farms and other food producers to create a stronger connection between consumers and producers and to promote a vibrant local food culture. This is a project that could be taken on by a local non-profit organization and possibly directed by the Chamber of Commerce.
Responsibility	All
Cost	None
Comments	

[36] BC Ministry of Environment. Technical methods and Guidance Document for 2007 CEEI Reports: Community Energy and Emissions Inventory (CEEI) Initiative. Draft May 2010. http://www.env.gov.bc.ca/cas/mitigation/ceei/CEEI_TechMethods_Guidance_final.pdf.

Initiative 6-1	**Encourage and support local food production and distribution.** Continued…
Action 6-12	**Support Municipally owned vacant lots to be used for community gardens.**
Timeframe	Medium-term
Description	This would allow vacant lots to be used to grow fruit and vegetables until the lot is ready to be redeveloped. It might bring community members together and give residents access to local food sources. A project like this would have to be initiated by the community.
Responsibility	All
Cost	None
Comments	

Initiative 6-2	**Incorporate policy into planning documents that enhances the proliferation of trees and vegetation.**
Action 6-21	**Review policy and regulations to ensure parking lots are landscaped to provide shade and permeability.**
Timeframe	Short-term
Description	This would keep vehicles cooler requiring less air conditioning. Vegetation also reduces the urban heat island effect. The landscape design would need to comply with CPTED (Crime Prevention Through Environmental Design) to ensure pedestrian safety at night.
Responsibility	Development Services Department
Cost	Unknown
Comments	
Action 6-22	**Consider adding street trees as a requirement in the Subdivision and Development Bylaw.**
Timeframe	Medium-term
Description	Street trees would be in the cross-sections of roads.
Responsibility	Engineering and Public Works / Development Services Department
Cost	Staff time
Comments	
Action 6-23	**Consider preparing a Tree Preservation Bylaw.**
Timeframe	Long-term
Description	A Tree Preservation Bylaw would first require a computerized inventory of all trees on City-owned property and road allowances as well as significant public or private trees. Then state regulations to disallow anyone from damaging, removing, or destroying any tree with exceptions.
Responsibility	Development Services Department
Cost	Staff time
Comments	

4.2.7 Goal 7: Demonstrate Municipal leadership.

Description

By demonstrating municipal leadership in community energy and emissions reduction, the District of Summerland could inspire residents and other municipalities to take action on climate change. It will also show commitment to contributing to a more sustainable Summerland.

Initiatives and Actions

Initiative 7-1	**Support the collection of data for Community Energy and Emissions Inventory Reports.**
Action 7-11	**Consider updating the community travel survey at regular intervals. This information will provide more accurate travel data for Summerland.**
Timeframe	Long-term/Ongoing
Description	As part of the work on the 2008 TMP, a Summerland Transportation Survey was conducted in April 2007. This travel survey should be redone periodically to monitor changes in Summerland's travel habits.
Responsibility	Engineering and Public Works / Development Services Department
Cost	Staff time and survey mail-out material and postage.
Comments	
Action 7-12	**Consider mapping Summerland's urban forest and identify tree planting locations in the municipality.**
Timeframe	Long-term
Description	Trees are considered a GHG sink. CEEI Reports have 13 additional supporting indicators that are under consideration for future inclusion in future CEEI Reports. One of these indicators is under the Land Use category and called Tree Canopy Cover which is the % change in tree canopy cover. Monitoring this indicator will provide data for the future.
Responsibility	Development Services Department - GIS Support Person
Cost	Staff time
Comments	

Initiative 7-2	**Support Summerland's Climate Action Fund.**
Action 7-21	**Based on the District of Summerland's yearly operational carbon footprint and the dollar amount equal to the prevailing market value of a tonne of carbon will be set aside in the annual budgeting process to buy carbon offsets or for inclusion in the Climate Action Fund.**
Timeframe	Medium-term/Ongoing
Description	In 2009 DoS emitted 1363.85 tCO2e. If carbon credits cost $25/Tonne, DoS would pay $34,096 that year. Similar to this calculation, a yearly amount would be calculated and put into the Climate Action Fund.
Responsibility	Development Service Department / Finance
Cost	Calculated yearly, but shouldn't be more than $35,000 per year.
Comments	

Initiative 7-3	**Improve energy efficiency of Municipally owned and operated buildings.**
Action 7-31	**All newly constructed, municipally owned and operated buildings, shall be at least 25 percent more energy efficient than those built to Provincial building codes.**
Timeframe	Ongoing
Description	Any new Municipal building will be designed and constructed to be an example of energy efficiency for the community. Keeping costs in mind, the building will have to be at least 25 percent more energy efficient than required by the BC building code.
Responsibility	ALL Departments
Cost	2-5% premium, but can save 10 times as much over the lifecycle of the building
Comments	

Initiative 7-4	**Support green economic development initiatives.**
Action 7-41	**Promote the ideas of "Carbon-neutral Vacations" or "Eco-Tourism" in Summerland through the Chamber of Commerce.**
Timeframe	Short-term
Description	Ecotourism provides an up-and-coming economic development opportunity for areas with natural beauty and cultural uniqueness. Carbon Neutral vacations might include biking, walking, eating local, etc. This initiative would have to be promoted by the Chamber of Commerce.
Responsibility	All Departments
Cost	None
Comments	
Action 7-42	**Support incentives to bring new green businesses to the community.**
Timeframe	Medium-term
Description	Research various incentives, including a property tax rebate.
Responsibility	All Departments
Cost	Unknown
Comments	
Action 7-43	**Encourage industrial businesses to cooperate in sharing resources to reduce waste and pollution.**
Timeframe	Medium-term
Description	If a new industry is coming to Summerland, there could be opportunities for the building and process to share resources with neighbouring industry.
Responsibility	Development Services Department
Cost	None
Comments	

Initiative 7-5	Support water conservation initiatives.
Action 7-51	**Consider implementing a rain barrel program to be rolled out with the first metered water bill.**
Timeframe	Short-term/Ongoing
Description	Offer residents a rain barrel for a subsidized price and provide them with water conservation information.
Responsibility	Development Services Department
Cost	There may be grant money
Comments	
Action 7-52	**Encourage greywater recycling and rainwater harvesting in new developments.**
Timeframe	Short-term
Description	Provide developers with information on greywater recycling and rainwater harvesting.
Responsibility	Development Services Department
Cost	Staff time
Comments	
Action 7-53	**Provide educational material on Xeriscaping and eco-lawn (or lawn alternatives).**
Timeframe	Short-term
Description	There could be brochures available for people to take home.
Responsibility	Development Services Department
Cost	Staff time to make the brochure and minimal cost to print the brochure.
Comments	

Initiative 7-6	Support initiatives to enhance air quality.
Action 7-61	**Support initiatives that improve air quality such as increasing our urban forest, lowering transportation emissions and improving and reducing all wood burning practices.**
Timeframe	Ongoing
Description	
Responsibility	All Departments
Cost	None
Comments	
Action 7-62	**Review and enforce outdoor burning regulations.**
Timeframe	Ongoing
Description	There is a bylaw in place that restricts outdoor burning by property size, permitted materials, and days. Outdoor burning is only permitted Oct 15 – Apr. 15 each year and on days identified as good ventilation days by Environment Canada. The DoS has a good compliance record.
Responsibility	Fire Department / Development Services Department
Cost	Staff time
Comments	

5 Implementation and Monitoring

This section sets out a strategy for implementing and monitoring Summerland Community Climate Action Plan.

5.1 ADMINISTRATION

5.1.1 Climate Action Working Group

One of the actions in this Plan (Action 3-13) is to form a Climate Action Working Group to work with staff to increase community awareness and aide in Plan implementation. This working group will replace the Climate Action Advisory Group that was formed for the preparation of the Community Climate Action Plan and will dissolve upon completion. The Climate Action Working Group will include representatives from:

- The District of Summerland
- Utilities
- Building Associations (CHBA)
- Chamber of Commerce
- Real Estate
- Agriculture
- Interested members of the public

Responsibilities of this working group will include:

- Actively promoting Summerland's Community Climate Action Plan within the community through participation, education, and awareness initiatives;
- Ensuring that the goals within the Plan are met through implementing the actions; and
- Reporting annually on the progress of the actions within the Plan.

5.1.2 Support from District of Summerland Staff

The District of Summerland hired a temporary Climate Action Planner to complete this Community Climate Action Plan (CCAP). When a Plan is complete a Municipality usually appoints a staff member to be responsible for implementation and monitoring or hires a full-time employee. The District of Summerland could fill the vacant Planner position and assign this employee to coordinate implementation of the CCAP with the help of the Climate Action Working Group.

Another option is to assign actions to each department manager and have time and resources allocated in the annual budget. With no one person responsible for Plan implementation, this option might be less successful.

5.1.3 Integration into Planning and Budgeting

Summerland's Community Climate Action Plan has a number of actions to help reduce community greenhouse gas emissions. It is recommended that, upon adoption, each action be identified for inclusion into the District's annual budget and priorities planning process.

5.2 Monitoring and Reporting

Summerland Community Climate Action Plan (CCAP) will guide the District's decision making with regards to planning to address climate change. A fundamental component of this Plan is to enable the District of Summerland to assess the progress of the community towards the defined targets to reduce GHG emissions. Indicators will help determine if the actions that have been implemented are moving the District towards or away from the goals within the Plan and if changes are needed.

The indicators listed in Table 8 are suggested for monitoring the progress of Summerland's CCAP.

Table 8: Suggested Indicators for Monitoring progress of the CCAP.

Initiative		Indicator	
Land Use	Support initiatives that promote compact development and prevent urban sprawl.	1.	Amount of agricultural land reserve (ha).
		2.	Residential density (how many people per net hectare).
		3.	Residential dwellings by housing type.
Transportation	Support transportation alternatives and infrastructure that leads to the reduction of greenhouse gas emissions.	4.	Energy used and greenhouse gas emissions for on road transportation (Based on BC Provincial CEEI Reports).
		5.	Travel modal split for the various forms of travel, such as vehicle driver, vehicle passenger, public transit, walk, bicycle, motorcycle/scooter, taxi or other (Every five years starting in 2012).
		6.	Annual transit ridership.
		7.	Kilometers of trail/bicycle lanes within the Summerland boundaries.
Buildings	Improve the energy efficiency of buildings.	8.	Energy used and greenhouse gas emissions for buildings (Based on BC Provincial CEEI Reports).
		9.	The number of projects using alternative energy.
		10.	Number of buildings with an energy rating in Summerland.
		11.	Energy and emissions data from Municipal operations.
Solid Waste	Support Initiatives that reduce and divert solid waste from the landfill.	12.	Tonnes of solid waste to the landfill and GHG emissions (Based on BC Provincial CEEI Reports).
		13.	Tonnes of waste diverted from the landfill (recycled material).
Ecosystem	Incorporate policy into planning documents that enhances the proliferation of trees and vegetation.	14.	Percent of tree canopy cover.
Water	Support water conservation initiatives.	15.	Water consumption (residential and agricultural).
Air Quality	Support initiatives to enhance air quality.	16.	Percentage of days where the ambient air quality exceeds provincial objectives and Canada wide standards for PM2.5 or ground level ozone.
		17.	Open burning permits issued and number of days open burning is permitted.

5.2.1 Annual Reporting

It is proposed that a brief annual progress report be prepared by the Climate Action Working Group to monitor progress of the implementation of the CCAP. The annual report will include:

- The progress and outcomes of actions implemented;
- Recommendations on amendments to the Plan, District policy, or procedures to better achieve the goals of the Plan;
- An action plan for the coming year.

The annual report should be shared with the Community through various forms of media.

5.2.2 Four Year Reporting

"Following the 2007 [CEEI] report, the Ministry of Environment intends to prepare a B.C. GHG inventory report for every even subsequent year (i.e., 2008, 2010, 2012 and beyond) of data".[37] It is recommended that Summerland community energy and emissions data be analyzed every four years starting with the 2010 collection year. This will include:

- An energy and emissions inventory compared to the 2007 baseline;
- A detailed review of the actions and their success; and
- Recommendations for Plan amendments.

The in-depth reporting every four years will reduce the amount of work associated with compiling data on an annual basis. Also, the CEEI reports will only be available every two years and many of the indicators can be obtained from this report.

[37] BC Ministry of Environment. Technical methods and Guidance Document for 2007 CEEI Reports: Community Energy and Emissions Inventory (CEEI) Initiative. Draft May 2010. http://www.env.gov.bc.ca/cas/mitigation/ceei/CEEI_TechMethods_Guidance_final.pdf.

5.3 FUNDING

Pursuing actions to address climate change can mean incurring costs. These costs may include staff time for program development, money for promotional material, money or trade-offs to provide incentives. The District of Summerland has limited monetary resources available which limits the incentives that can be offered for residents to take climate action. It is expected that the District of Summerland will be able to provide staff and program administration resources, while other organizations will have to be relied on to provide funding incentives. It is expected that resources and funds from annual budgets will be allocated to implement Summerland's CCAP.

5.3.1 Partnerships

Partnerships and cost sharing initiatives can build relationships and reduce costs to achieve the most from implementing the CCAP (See Table 9). There are programs currently being offered by other organizations that don't need to be duplicated by the District of Summerland. However, the District can share this information to the benefit of the community. There are also opportunities to cost-share with other organizations to take advantage of economies of scale. Also, if a program is successful in one municipality, information can be shared to reduce program design time. The District of Summerland would benefit from forming partnerships and taking advantage of existing programs.

Table 9: Programs Available to Support Climate Action.

Focus Area	Sources for information, funding, and partnerships			
	Federal	**Provincial**	**Utility**	**Other Organizations**
Administration	General Strategic Priorities Fund and Innovations Fund for Capacity Building or Integrated Community Sustainability	BC Climate Action Toolkit		Union of BC Municipalities (UBCM)
Land Use	FCM - Green Municipal Fund	Ministry of Community and Rural Development, Smart Development Partnership Program		Community Energy Association
				Smart Growth BC
Buildings		BC Building Code	Fortis - Partner in Efficiency Program	Real Estate Foundation of British Columbia Funding Program
		Live Smart BC	Fortis - New Home Program	
Transportation	FCM - Green Municipal Fund.	Alternative Fuel Vehicles Tax Concessions		Carpool.ca
		Residential Energy Credit and Rebate Program		Green Fleets BC
Energy	FCM - Green Municipal Fund.	Residential Energy Credit and Rebate Program	Fortis - Power Sense Program	Solar BC
Water				Okanagan Basin Water Board

5.4 IMPLEMENTATION TIMELINE

The timeline below is a recommended schedule for implementation.

Table 10: CCAP Implementation Timeline to 2012

Summer 2011	CCAP Adoption
	Assign a Staff Member responsible to coordinate Plan implementation.
Fall 2011	Form a Climate Action Working Group
Winter 2011/12	Prepare a Communications Plan to address education and outreach for Summerland's Climate Action Plan.
	Review actions and define the annual cycle of actions and budget.
	Include actions in to the Municipal budget process
2012	Ongoing implementation and program development
	Apply for funding opportunities
Winter 2012	Prepare the annual CCAP progress report.
	Make amendments to the CCAP for the next year.

6 Appendix

6.1 Appendix A: FortisBC Estimated Rate Increases

The following slide is from a public open house that FortisBC held in February 2011 regarding their Integrated System Plan. This slide is showing estimated rate increases.