



Regional District of Central Kootenay Strategic Community Energy & Emissions Plan

Workshop: February 19 and 23, 2016

RDCK Board Adoption in Principle, September 15, 2016



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September 15, 2016 Board Resolution:

The RDCK Board “adopt in principle” the RDCK Strategic Community Energy and Emissions Plan (SCEEP) and direct staff to consider the SCEEP when recommending actions for implementation that benefit both corporate and community energy and emissions reductions.

List of Acronyms

BAU	Business As Usual
BCH	BC Hydro
CBT	Columbia Basin Trust
CEA	Community Energy Association
cea	a certified energy advisor (depending on context).
CEEI	Community Energy and Emissions Inventory (inventories created by the Province for each local government)
CO ₂	Carbon Dioxide
DCC	Development Cost Charge
DSM	Demand Side Management (name for measures used to reduce energy consumption)
EEC	Energy efficiency and conservation
FBC	Fortis BC (electricity and gas) utility
GHG	Greenhouse Gas (there are several different anthropogenic GHGs and they have different relative impacts. When tonnes of GHGs are stated in the document the standard practice of stating this in equivalent of tonnes of carbon dioxide is followed. Carbon dioxide is the most important anthropogenic GHG.)
GJ	Gigajoules (one of the standard measures of energy)
HERO	Home Energy Rebate Offer, a program offered through FortisBC and BC Hydro to provide rebates to homeowners for energy efficient renovations.
HPO	Homeowners Protection Office
HDV	Heavy Duty Vehicles (i.e. commercial vehicles, like trucks)
ICSP	Integrated Community Sustainability Plan
kWh	kilowatt hours (standard measure of energy, typically used with electricity)
LAP	Local Area Plan
LDV	Light Duty Vehicles (i.e. the types of vehicles driven by ordinary people)
OCP	Official Community Plan
RGS	Regional Growth Strategy
SCEEP	Strategic Community Energy and Emissions Plan

Executive Summary

On February 19 and 23, 2016, a workshop was held with Regional District of Central Kootenay staff and Elected Officials and staff from member municipalities, Interior Health, Ministry of Highways and Infrastructure, School District 8, certified energy advisor and Columbia Basin Trust. The workshop was facilitated by Community Energy Association and Fortis BC. The project is funded by the FortisBC and Columbia Basin Trust.

At the workshop, participants were divided into three colour coded sub-regional groups. Each sub-region participated in a sub-regional exercise to produce a general strategic community energy and emissions action plan for the sub-region. This document summarizes the three sub-regional efforts to create an overall Rural Area Regional District of Central Kootenay Strategic Community Energy and Emissions Plan (SCEEP). The sub-regions are as follows:

- Yellow – Areas ABC and Creston
- Green – Areas HIJK and Castlegar, Slocan, Silverton, New Denver and Nakusp
- Blue – Areas DEFG and Kaslo, Nelson and Salmo.

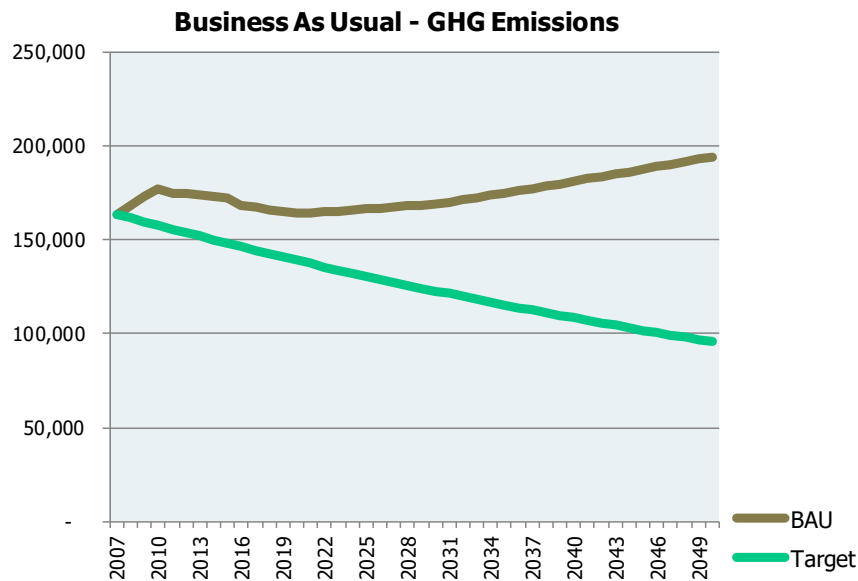
Many thanks to the workshop group who spent their day to look at energy, emissions, and energy expenditure data for the region and develop an action plan.

Community energy and emissions – current status and business as usual

For the modelling process, the workshop group used an annual average regional population growth rate of 0.80% (Based on population statistics from rural areas, municipalities and local knowledge) and used the reduction target consistent in all of the Rural RDCK OCPs which is to reduce emissions 15% below 2007 levels by 2020.

In 2010 the total Rural Unincorporated Areas energy expenditure was approximately \$113 million, and GHG emissions were 177,500 tonnes. Further detail on the energy and emissions for the community can be found in the 2010 Community Energy and Emissions Inventory (CEEI) produced by the Province (see Appendix 1).

With no action plan, but taking into account the GHG reducing impact of Provincial and Federal policies already in place, community emissions are predicted to change relative to the target trajectory according to the following chart:



Regional District of Central Kootenay continues to be a climate action leader following the UBCM award winning Carbon Neutral Kootenay partnership, and has already initiated a number of actions to reduce corporate GHGs. The workshop group identified an action plan to further reduce community energy consumption and emissions.

For modeling purposes, the SCEEP uses an “average priority year”, as identified by each of the three sub-regions, to note the year the Action is to be considered at the RDCK level. That is if each sub-region noted a different year to undertake an action, e.g., 1, 2 and 3; the model used Year 2 as the average priority year for the SCEEP model purposes. Diagrams in this document reflect the RDCK overall “average priority year” for identified SCEEP actions. For comparison purposes, a second table is shown which summarizes the Municipal Energy Plan Actions as well as the three RDCK sub-regional Plans, and to show which actions may have support for a regional focus

The numbers of the actions listed in the tables correspond to their numbers in the SCEEP Actions Guide (see Appendix 2), which contains further detail about each action. Some new actions were also created and not listed in the SCEEP Actions Guide (for further details on this see the “Unpacking Actions” sub-section). Information on FortisBC Demand Side Management (DSM) program incentives found on the website: <http://www.fortisbc.com/Rebates/RebatesOffers/>. An in-depth discussion on all of the opportunities and most of the actions occurred at the workshop.

Legend of Priorities for Tables Below:

- 1 - year one priority, ongoing, done or education piece);
- 2 - year 2 priority;
- 3 - year 3 priority;
- 4 or 5 - year 4/5 or “maybe” with no year attached priority.

Actions marked with an ‘M’ are categorised as ‘maybes’.

All RDCK Local Governments have prepared a Community Energy and Emissions Plan since 2011.

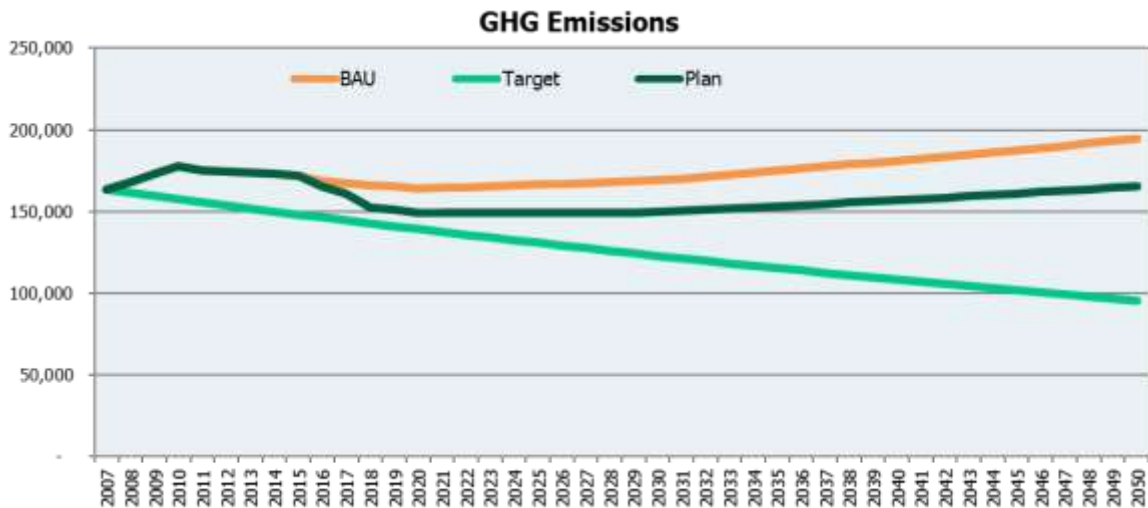
- Castlegar, Creston, Kaslo, Salmo and Slocan SCEEP FortisBC program, 2015
- Nakusp and Silvertown (with New Denver participating) BC Hydro CEEP Quickstart, 2014
- Nelson, Nelson Low Carbon Plan, 2011.

Central Kootenay Regional District Unincorporated Areas		Years reduction occurs			
Actions	Already done / ongoing	2016	2017	2018	2019
		1 Buildings Basics			
1.1 Promote electricity, natural gas, & other energy efficiency programs	X				
1.2 District energy / renewable energy systems, e.g. solar garden			X		
1.3 Building code energy efficiency - educate & support compliance	X				
NEW ACTION: Decentralized Local Energy Production			X		
2 Buildings High-Growth Measures					
2.1 Sustainability checklist for buildings	X				
2.3 Review zoning bylaw for opportunities to encourage energy performance, with tiny / eco home zoning			X		
2.4 Density bonus for energy performance					M
2.6 Fee rebates to encourage improved energy performance					M
2.7 Revitalization tax exemption bylaw for buildings with improved energy performance					M
2.8 Development Cost Charge (DCC) reductions or waivers for GHG's				M	
2.9 Development Permit Area - to enhance energy performance (e.g. orientation, landscaping)					M
NEW ACTION: Radon Rating	X				
3 Residential Buildings					
3.1 Sign on to solar-ready building code provision					M
3.2 Education for developers - energy efficiency & renewable energy		X			
3.3 Education for realtors - energy efficiency & renewable energy		X			
3.4 Comprehensive energy efficiency retrofit campaign (e.g. Energy Diet)		X			
3.5 Voluntary or mandatory energy labelling of existing or new homes		X			
3.6 Efficient wood stove program & bylaws	X				
3.7 Helping people source wood fuel (e.g. from community forest)				X	
4 Commercial / Institutional Buildings and Transportation					
4.1 Promote the free Business Energy Advisor assessments		X			
4.2 Encourage biomass heating through education or leading by example				X	
4.3 Convert Local Government owned streetlights to LED		X			
5 LDV Transportation Urban Form					
5.1 Land use suite "lite"	X				
5.2 Land use suite "enhanced"			X		
5.3 Street design			X		
5.4 Implement 30 km/hr speed limit in parts of the community		X			
5.5 Variable DCC's to encourage infill development				M	
5.6 Flow RGS, OCP, and local area plans through to zoning	X				
6 LDV Transportation – Infrastructure & Collaboration					
6.1 Active transportation planning			X		
6.2 Improve active transportation infrastructure	X				
6.3 Anti-idling campaign / bylaw			X		
6.4 Special event planning	X				
6.5 Collaborate with major employers on work-related transportation					X
6.6 Transit suite, with community partners, School District & Interior Health			X		
6.7 Intercommunity transit services			X		
6.8 Support car share cooperatives, City vehicles for Citizens On Patrol, or donate old City vehicles	X				
6.9 Raising awareness of ride sharing and guaranteed ride home programs			M		
6.10 Low carbon and electric vehicle fuelling/charging stations				X	
6.11 Electric vehicle & e-bike awareness event				X	
7 Waste					
7.1 Organics diversion			X		
7.2 Encourage water conservation	X				
7.3 Support local food production, e.g. farmers markets, community gardens	X				
NEW ACTION: Organics diversion planning		X			
8 Enabling Actions					
8.1 Review land use & transportation plans / policies for SCEEP incorporation	X				
8.2 Organizational structure for climate action			X		
8.3 Establish a regional energy co-operative				X	
8.4 Identify green economy opportunities			X		
8.5 Leverage local government assets into community change	X				
8.6 Long-term, deep community engagement (culture change)	X				

COMMUNITY	Castlegar	Creston	Kaslo	Salmo	Slocan	Nakusp	Silverton (New Denver)	Nelson	ABC - Creston	HTJK - Slocan Valley / Castlegar / Nakusp	DEFG - Nelson / Salmo / Kaslo	RDCX overall
	annual target- from OCP's based on 2020 annual population growth	-3.0%	-1.0%	-0.8%	-1.7%	-3.0%	-1.3%	-0.5%	-1.8%	-1.2%	-1.2%	-1.2%
Utility	Fortis BC	Fortis BC	Fortis BC	Fortis BC	Fortis BC	BC Hydr	BC Hydr	Nelson H	FBC	FBC/BCH	FBC/NH	FBC/BCH/NH
Year of Energy Plan: FBC SCEEP/BCH CEEP /Nelson Low Carbon Path	2015	2015	2015	2015	2015	2013	2013	2011	2016	2016	2016	2016
Buildings Basics												
1.1 Promote electricity, natural gas, and other energy efficiency programs	1	1	1	1	1	2	2		1	Education	2	1
1.2 District energy / renewable energy systems	3	3	2	3	1	2	2	2	3	2	2	2
1.3 Building code energy efficiency - educate & support compliance/Increase Eff	2	1	1	2	1	4		2	1	1	1	1
New Action: Decentralized Local Energy Production										2		2
Buildings High Growth Measures												
2.1 Sustainability checklist for buildings	1	1	1	1	1	4	2		1	Education	1	1
2.2 Create rezoning policy to achieve desired energy performance	2	1	3		4	1	2			M		
2.3 Review zoning bylaw for opportunities to encourage energy performance	1	1	3		4				3M	Ongoing		2
2.4 Density bonus for energy performance	2	3							3M	M		4M
2.5 Expediting permit approvals to encourage energy performance					1							
2.6 Fee rebates to encourage improved energy performance	2	5		5	4				1	M		3M
2.7 Revitalization tax exemption bylaw for buildings with improved energy perfo	1	3	3	3	4	5	5		3	M		4M
2.8 Development Cost Charge (DCC) reductions or waivers, for GHG's	2	2				5			2M	M		3M
2.9 Development Permit Area (DPA) - to enhance energy performance (e.g. orie	1	1	1		3				3M	M		4M
2.10 DPA energy performance/renewable energy/climate protection design	2	3	1	5	3			3		M		
New Action: Radon Rating											1	1
Residential Buildings												
3.1 Sign on to solar-ready building code provision	2	3		3	1		5		4M	M		4M
3.2 Education for developers – energy efficiency & renewable energy	1	2	1	1	1	2	2		2	1	1	1
3.3 Education for realtors - energy efficiency & renewable energy	1	2	1	1	1				2	1	1	1
3.4 Comprehensive energy efficiency retrofit campaign (e.g. Energy Diet)	2	1	3	2	3			3	1	Education	1	1
3.5 Voluntary or mandatory energy labelling of existing or new homes	3	2	1	2	2				1	Education	2	1
3.6 Efficient wood stove program & bylaws	1	1	1	1	1	1	1		Done	Done	Done	Done
3.7 Helping people source wood fuel (e.g. from community forest)	1	1	1	1	1				2	M	2	3
Commercial/Institutional Buildings and Transportation												
4.1 Promote the free Business Energy Advisor assessments	1	1	1	1	1	2	2		1	Education	1	1
4.2 Encourage biomass heating through education or leading by example			1	5	4	2	2	4	4	2	3	3
4.3 Convert local government owned streetlights to LED	1	1	1	3	1				2	1	1	1
Transportation Urban Forum												
5.1 Land use suite lite	1	1	1	1	1		1		2	Ongoing	Ongoing	Ongoing
5.2 Land use suite enhanced	1	1	1	1	1		5	1	2	Ongoing		2
5.3 Street design	1	1	1	1	1	4			3	Ongoing		2
5.4 Implement 30 km/hr speed limit in parts of the community		1	1		1					Ongoing	1	1
5.5 Variable Development Cost Charges (DCC's) to encourage infill development	1	1						3	2	No		2M
5.6 Flow RGS, OCP, and LAP through to zoning	1	1	3	1	1	4	5			Done	3	Ongoing
Transportation Infrastructure and Collaboration												
6.1 Active transportation planning	1	3	1	1	1	3		4	2	Ongoing	2	2
6.2 Improve active transportation infrastructure	1	3	1	1	1	3	1		3	Ongoing	Ongoing	Ongoing
6.3 Anti-idling campaign / bylaw	1	1	1	1	1				1	Education	3	2
6.4 Special event planning	1	1	1		1	1	1		Done	Ongoing	Ongoing	Ongoing
6.5 Collaborate with major employers on work-related transportation	1	2	1	1	1					3	4	4
6.6 Transit suite/Intercommunity Transit services	1	1	1	3	1	1	3	4	2	3	2	2
6.7 Intercommunity transit services	1	1	1	3	1	1	2		2	3	2	2
6.8 Support car share cooperatives	1	1	1	3	1				Done	M	3	Ongoing
6.9 Raising awareness of ride sharing and guaranteed ride home programs	1	1	1	1	1		2	4	2M	Education		2M
6.10 Low carbon and electric vehicle fuelling / charging stations	1	1	1	1	1				2	M	3	3
6.11 Electric vehicle & e-bike awareness event	1	1	1	1	2			4	3	M	Ongoing	3
6.12 Natural Gas Vehicle Collaboration	5	5										
Waste												
7.1 Organics diversion	3	1	2	3	2	1	1	4	4	m	2	1
7.2 Encourage water conservation	1	1	1	1	1				Done		Done	Done
7.3 Support local food production, e.g. farmers markets, community gardens, co	1	1	2	1	1				Done		Ongoing	Ongoing
New Action: Planning for organics diversion											1	1
Enabling Actions												
8.1 Review land use & transportation plans / policies for SCEEP incorporation	1	1	1	1	1				1	Ongoing	Ongoing	Ongoing
8.2 Organizational structure for climate action	1		1	1	1	2	3		1	M		2
8.3 Establish a regional energy cooperative	5	5	1	2	1	2	3		4	2M		3
8.4 Identify green economy opportunities	1	2	1	2	1	1	3		Ongoing	M	2	2
8.5 Leverage local government assets to create expertise and community-wide c	1	2	2	4	1	2	4	2	Ongoing	Education	Ongoing	Ongoing
8.6 Long-term, deep community engagement (culture change)	1	2	1	4	1	3	3	1	Ongoing	Education	1	Ongoing

The estimated impact of the plan on community greenhouse gas emissions (in tonnes of GHGs per year) is shown below. Significant emissions reductions will be achieved beyond Business As Usual, however there is still a considerable gap to the GHG target trajectory.

The Regional District of Central Kootenay has levers to reduce community energy and emissions and can move closer towards its target, but many things do remain outside of the Regional District’s control including Federal and Provincial actions, and technological changes.



Note that actions to reduce electricity consumption will result in financial savings for the community, but will not result in significant savings in emissions. Electricity in BC has a very low greenhouse gas intensity, and should be carbon neutral for 2016.

The major actions for Central Kootenay, listed by impacts in terms of annual GHG savings in the year 2020 are:

- 5.2 – Land use suite “enhanced” – 3000 tonnes / year
- 7.1 – Organics diversion – 2700 tonnes / year
- 6.5 – Collaborate with major employers on work related transportation – 750 tonnes / year
- 1.1 – Promote electric, natural gas and other energy efficiency programs – 473 tonnes / year

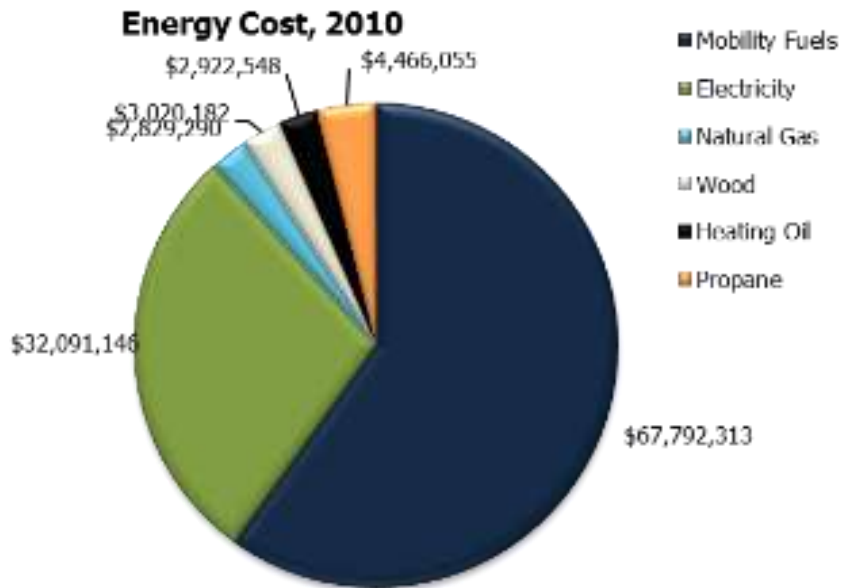
Next Steps

1. Submit final Strategic Community Energy and Emissions Plan (SCEEP) to the Board, with goals, policies, and recommendations
2. Investigate model to establish a Community Energy Manager position/contract to support implementation of the SCEEP for RDCK and member municipalities at the regional level.
3. Circulate SCEEP to workshop participants for further identification of additional stakeholders to contribute, e.g. School Districts, Colleges, Economic Development / Business Community
4. Incorporate SCEEP into the Regional District policy framework
5. Ongoing SCEEP implementation

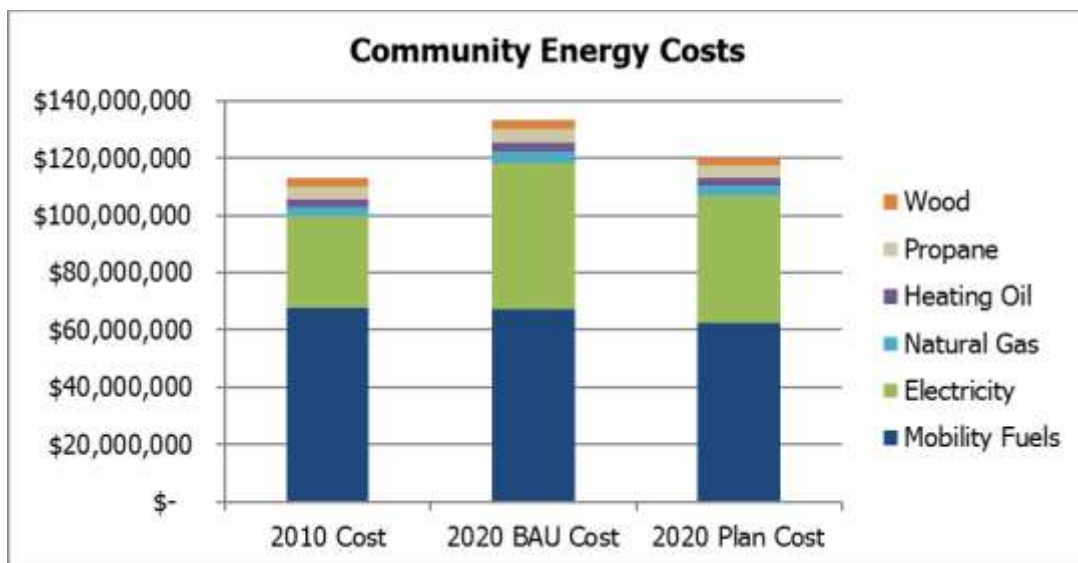
Community Financial Savings

For the Regional District of Central Kootenay, only a small percentage of the energy dollars spent within the community remain within the region. A significant co-benefit of implementing this plan to reduce energy consumption and emissions is that reducing energy dollars spent helps residents and businesses reduce expenses. In addition, locally generated energy helps to keep energy dollars local rather than exported.

The adjacent chart shows the approximately \$113 million (\$3,500 per capita) of Central Kootenay Unincorporated Areas community energy expenditures made in 2010, split by fuel type.



The impacts of the plan are shown in the following chart, comparing 2010 and 2020. Rural community energy costs are projected to be reduced by approximately 10% through plan implementation. The model assumes that energy prices will increase to 2020. So, the 10% plan cost reduction equates to about \$13 million per year (\$430 per capita). Although energy prices are very difficult to predict, there is confidence that the price of electricity will increase over the next few years.



Introduction

Through Bill 27, local governments in BC are required to make efforts towards reducing the greenhouse gas emissions of their communities. In addition, considering the energy and emissions from the community can give opportunities for increased efficiency and financial savings for the rural population of approximately 31,000 people. The figures in this report are based on 2010 energy and emissions inventory data from the Province, and recent energy costing data.

Bill 27 background

Through the Local Government (Green Communities) Statutes Amendment Act, also known as Bill 27, municipalities and regional districts are required to include targets, policies, and actions towards reducing greenhouse gas emissions from their communities in their Official Community Plans and Regional Growth Strategies.

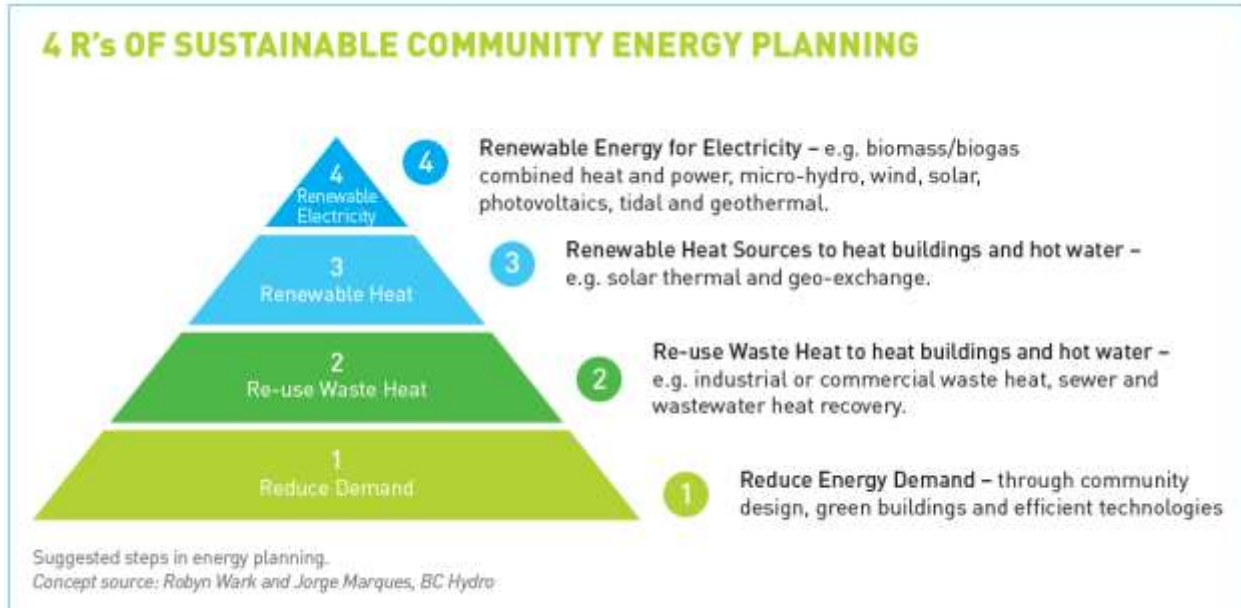
Strategic Community Energy and Emissions Planning

A Strategic Community Energy and Emissions Plan (SCEEP) evaluates a community's existing energy use and greenhouse gas (GHG) emissions with a view to improving efficiency, cutting emissions, enhancing community resilience, managing future risks, and driving economic development. A SCEEP usually encompasses building and site planning, renewable energy supply, land use and transportation planning, and infrastructure (including solid and liquid waste management). It provides guidance to a local government in long-term decision making processes.

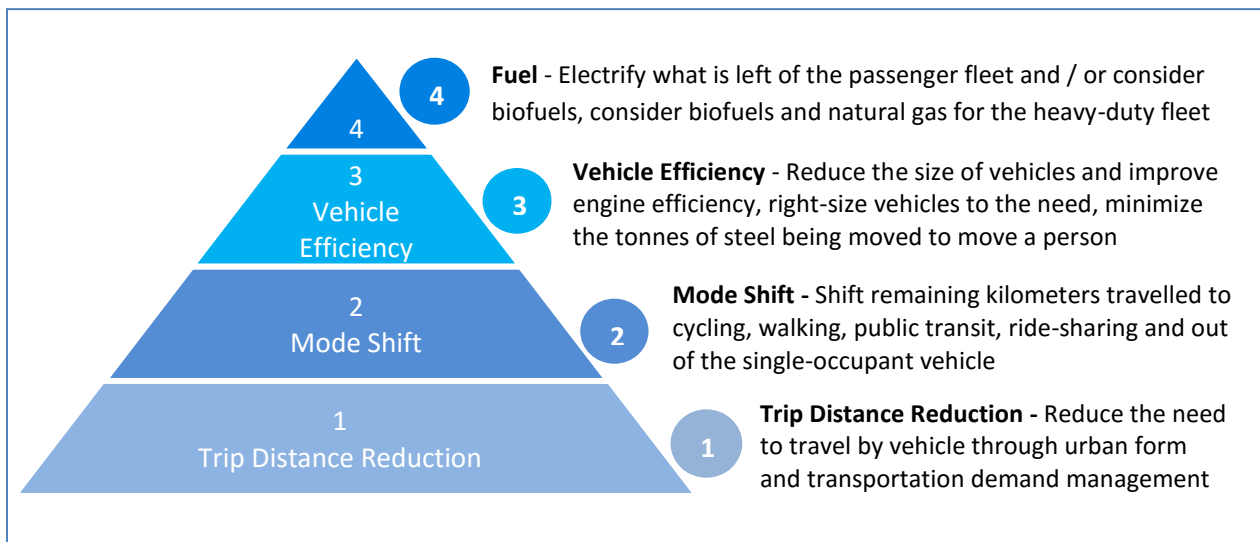
Most GHG emissions within a local government's jurisdiction result from energy consumption and the burning of fossil fuels. With this relationship it makes sense to combine GHG and energy planning into one integrated plan. While some communities have completed stand-alone energy or GHG action plans, the close linkages between energy and GHG emissions suggest that a combined plan is preferable. In this guide the term Strategic Community Energy and Emissions Plan (and the acronym SCEEP) is intended to incorporate both energy and GHG emissions, but not other emissions such as particulates or criteria air contaminants.

Energy Planning Hierarchy

Not all opportunities to influence energy and emissions across a community are created equally. It makes sense to reduce demand as much as possible first, since usually the best business cases are found through improving efficiency.

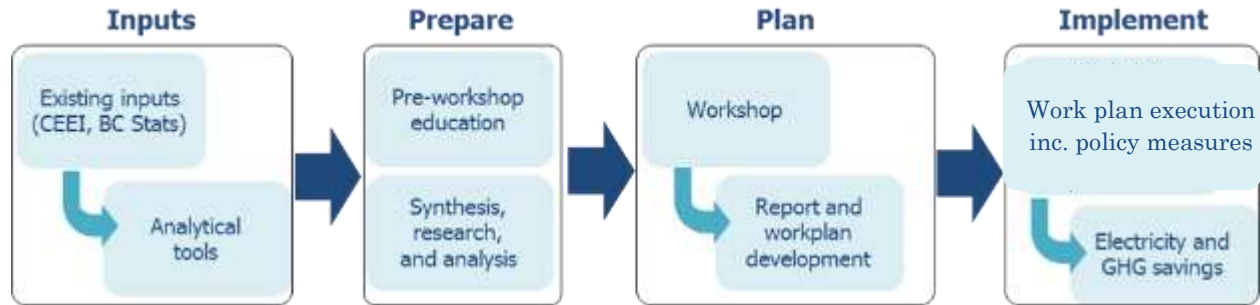


A similar hierarchy can be applied to the transportation sector. The easiest step to take is to reduce vehicular trip distances through appropriate urban form (planning) and transportation demand management.



SCEEP Actions Overview

Strategic Community Energy and Emissions Planning (SCEEP) is an initiative assisting Kootenay communities within the Columbia Basin and FortisBC electrical service area to develop a cost effective and practical SCEEP including an implementation timeline. The SCEEP process is depicted in the graphic below:



REGISTRATION

- Initial call with key staff to determine comprehensive community information for analysis by CEA and select preferred SCEEP workshop dates

PREPARATION

- Engage in a 1 hour webinar approximately 1 week prior to your workshop to build on foundations from the pre-workshop reading

PLANNING

- Develop a SCEEP in your 1.5 day workshop, led by an expert in the field, funded by FortisBC and Columbia Basin Trust

IMPLEMENTATION

- Complete report and gain Council approval, with up to 12 hours of support funded by FortisBC and CBT
- Work on implementing policy measures with up to 35 hours of funded coaching
- Keep CEA, FortisBC, and CBT informed of success stories
- Green your community and achieve electricity and GHG savings

Participant Commitments

SCEEP participants commit to and are responsible for:

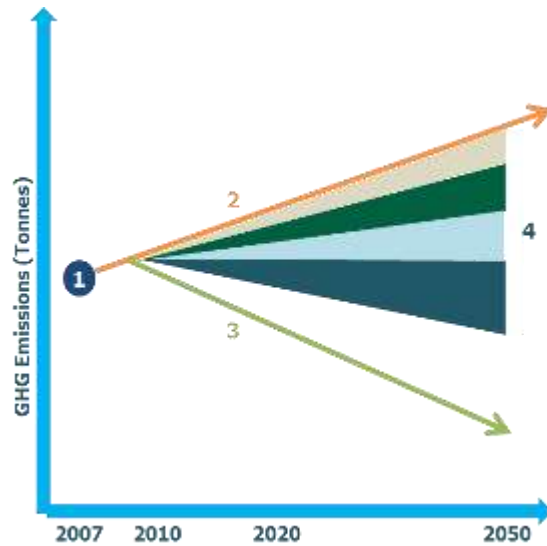
- Taking ownership and demonstrating leadership concerning the SCEEP
- Submitting SCEEP to Board for approval
- Implementing the SCEEP in their community

A Strategic Energy and Emissions Plan is a comprehensive, long-term plan to improve energy efficiency, reduce GHG emissions, and foster local green energy solutions in the community.

A Strategic Community Energy and Emissions Plan evaluates a community’s existing energy use and GHG emissions in order to reduce energy consumption and emissions, improve efficiency, and increase the local renewable energy supply. A SCEEP encompasses buildings, land use and transportation planning, infrastructure (including solid and liquid waste management), and renewable energy supply. It provides guidance to a local government in planning future developments and in long-term decision making processes.

There are four elements of a SCEEP:

1. **BASELINE:** 2007 Energy and Emissions, from the Community Energy and Emissions Inventory (CEEI), provided by the Province
2. **BUSINESS-AS-USUAL FORECAST**
 - a. Population forecast (BC Stats and local government)
 - b. Impact of provincial commitments (tailpipe standards, fuel standards, building code)
3. **TARGET:** From OCP or RGS GHG reduction target (legally required), expressed as an annual percentage
4. **ACTION PLAN:** To be developed from the SCEEP menu of 50 actions plus locally specific opportunities; and including an approach to estimating impacts.



Benefits of Developing a SCEEP

Reduce GHG emissions: Energy planning helps local government effectively manage GHG emissions. This contributes to mitigating climate change, and helps manage costs associated with carbon taxes and offsetting.

Reduction of energy costs: Energy planning improves budgeting and saves money.

Creation of jobs and stimulation of the local economy: a SCEEP can highlight opportunities for community development.

An opportunity to demonstrate leadership: a SCEEP contributes to a smart community plan, more efficient infrastructure, more livable neighbourhoods, and protection of the environment; showing leadership on multiple fronts.

Action Plan

On February 19 and 23, 2016, a workshop was held with Regional District of Central Kootenay staff, Elected Officials, staff from member municipalities, Interior Health, Ministry of Highways and Infrastructure, School District 8, certified energy advisor and Columbia Basin Trust. The workshop was facilitated by Community Energy Association and FortisBC. The project is funded by the FortisBC and Columbia Basin Trust.

At the workshop, participants were divided into three colour coded sub-regional groups. Each sub-region participated in a regional exercise to produce a general strategic community energy and emissions action plan for the sub-region. This document summarizes the three sub-regional efforts to create an overall Rural Area Regional District of Central Kootenay Strategic Community Energy and Emissions Plan (SCEEP). The sub-regions are as follows:

- Yellow – Areas ABC and Creston
- Green – Areas HIJK and Castlegar, Slocan, Silverton, New Denver and Nakusp
- Blue – Areas DEFG and Kaslo, Nelson and Salmo.

Community Stakeholders are invited to participate in the Strategic Community Energy and Emissions Plan development. The stakeholders provide their perspective on collaborative opportunities to develop a plan to reduce energy and emissions and to enhance community health and livability.

Diagram source: *Healthy Built Environments, Interior Health*



Message from Interior Health:
Healthy Communities in IH is a set of complementary programs that work with local governments around the region to promote health and the creation of healthy public policy and planning. The rates of chronic diseases such as diabetes and cardiovascular disease are rising in Interior Health. Much of this increase is attributable to physical inactivity, tobacco use, and unhealthy diets, and is preventable. Community planning and design can influence the health of the population and reduce chronic disease. The IH healthy built environment (HBE) team, the community health facilitators, the tobacco reduction team, and the community food security team are available to collaborate with Local Government.

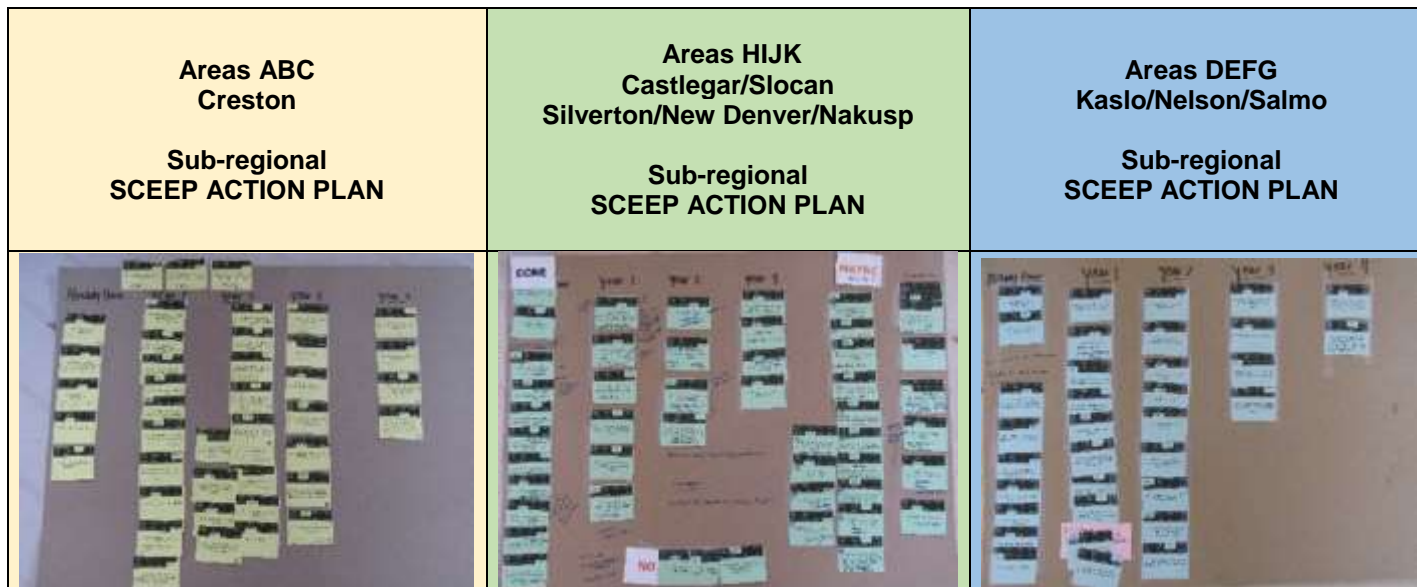
The workshop group looked at energy, emissions, and energy expenditure data for the community as a whole and decided on an action plan. The workshop group also noted that OCP policies and actions noted in the CARIP (Climate Action Revenue Incentive Program) reporting are supportive of many of the actions being discussed.

To assist with pre-workshop preparation, a one-hour preparatory webinar was held to provide background information on how energy planning initiatives can influence carbon emissions while also providing opportunities for financial savings within the community.

At the workshop a GHG reduction assessment tool was introduced. The tool has been provided to staff for use in further analysis, and is populated with data derived from calculations developed to assess the impact that various actions and strategies may have on GHG emissions into the future. The tool shows the final results in user friendly charts and graphs. Note that for the purpose of this overall RDCK SCEEP document, the actions prioritized by each sub-region have been averaged and used to create one overall model for the RDCK.

Each sub-regional workshop group was provided with a set of action cards. Each action was discussed within the group and placed in one of four categories: “yes”, “no”, “maybe”, and “done”.

The actions were placed on a chart to create a plan for the years from 2016-2019 (Years 1 to 4). The group was invited to provide input on timing and sequencing of actions. Ongoing actions are also reflected in the plan. Following this, key actions were discussed in more detail. Workshop discussion is found in Appendix 3 of this document.

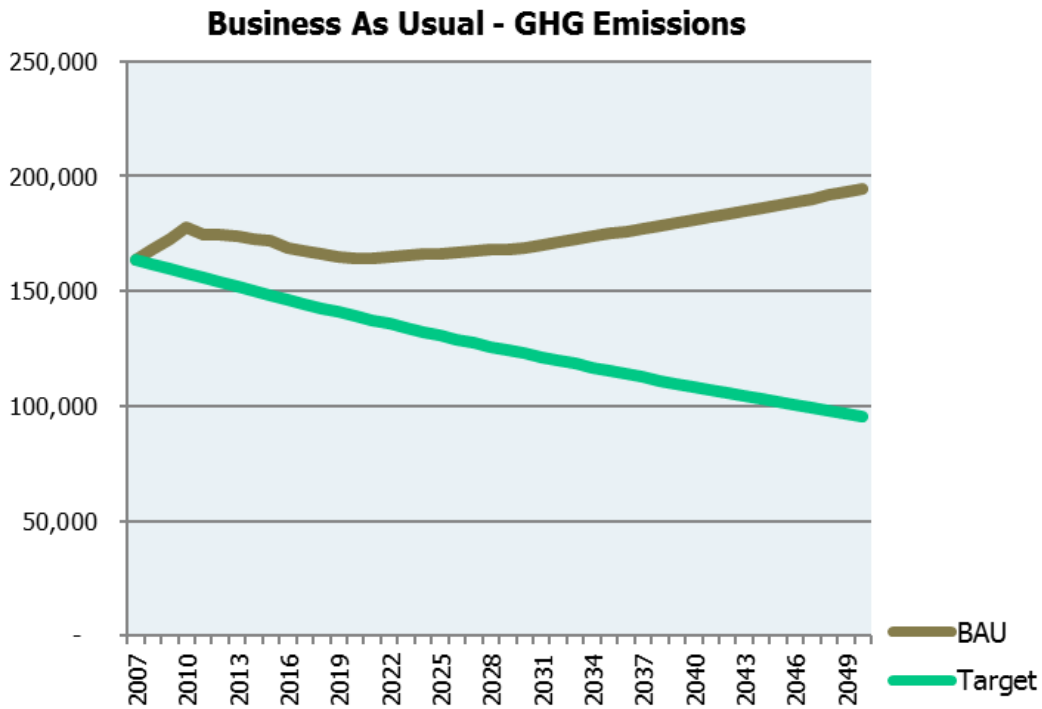
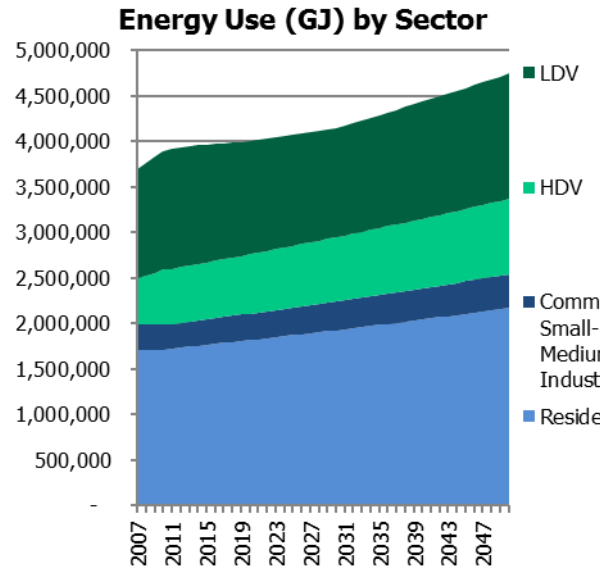
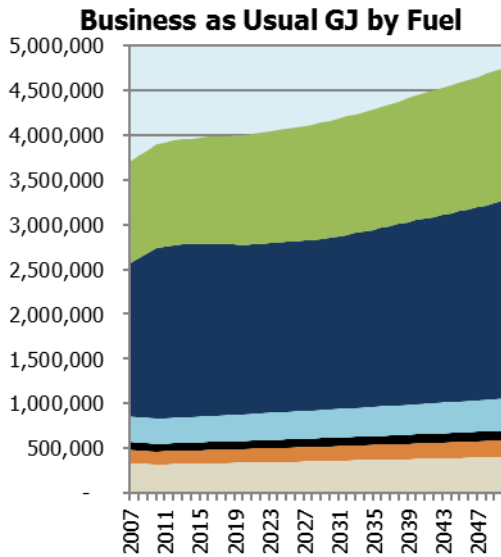


Current Emissions and ‘Business As Usual’ Projections

The Province of BC has calculated the total energy use and greenhouse gas emissions from the community for 2010 through the Community Energy and Emissions Inventory (CEEI). In 2010 total unincorporated rural areas annual energy expenditure was approximately \$113 million (\$3,500 per capita), and GHG emissions were approximately 177,500 tonnes (5.5 tonnes per capita). Further detail on the energy and emissions for the community can be found in the 2010 CEEI, which is in Appendix 1.

For the modelling process, the workshop group used an annual average regional population growth rate of 0.80% (Based on Stats Canada Population figures for unincorporated rural areas, municipalities and discussion) and used the reduction target consistent in all of the Electoral Area RDCK OCPs which is to reduce emissions 15% below 2007 levels by 2020. Without an action plan and taking into account the population projection and Provincial and Federal policies, community emissions are predicted to change according to the tables and charts in the rest of this section as “Business as Usual”.

"Business As Usual" Projections & Target Overview				
Community	Kootenay Regional District Unincorporated			
Annual % target change in ghg	-1.24%			
Population growth	0.80%			
Default population growth	0.29%			
2007 Population	30,897			
Start-year for actions	2016			
Emissions Summary				
2007 Emissions	163,625			
2010 Emissions	177,483			
Total Energy Expenditure	\$	113,121,533		
Per-capita energy cost	\$	3,474		
2010 Per-capita emissions	5.45			
Targets Summary				
	2016	2020	2030	2050
Total reduction	-10.6%	-15%	-25%	-42%
Per-capita reduction	-19%	-25%	-39%	-60%
Total GHG	146,244	139,124	122,805	95,683
Per-Capita GHG	4.3	3.9	3.2	2.1
Business as Usual (BAU) Summary				
	2016	2020	2030	2050
GHG's	168,660	164,007	168,929	194,333
GHG growth	3%	0%	3%	19%
Population	34,152	35,258	38,183	44,779
Pop growth	3,255	4,361	7,286	13,882
Pop Grow %	11%	14%	24%	45%
Per capita emissions	4.94	4.65	4.42	4.34



Actions Already Initiated

The Regional District of Central Kootenay is already a climate action leader, and has undertaken an impressive array of actions relating to reductions in community energy and emissions. These are summarized in the following table.

Actions reported as being completed by the workshop team are also noted in the table. More actions undertaken by RDCK are noted in Appendix 4 under the sub-regional summaries. Many actions are reported in the annual CARIP report submitted by the RDCK and publically available. These lists are by no means exhaustive:

Action	Year	Comments
3.6 Efficient wood stove program & bylaws		Program underway.
Resource Recovery Plan		Review to develop region wide resource recovery
Carbon Neutral Kootenays	2009-2014	Participated in collaborative actions to reduce corporate carbon emissions.
Kootenay Energy Diet	2013	Support for Residential energy efficient upgrades in FortisBC territory.

Action Plan

The action plan developed by the workshop group is shown below. Actions that are in the SCEEP Actions Guide but considered inapplicable, are not included below. The actions in the plan were categorised according to which year it was believed that they will be implemented or investigated.

For modeling purposes, the three sub-regional SCEEP action plans have been averaged in terms the Year the Action is to be considered. Modeling diagrams in this document reflect the “RDCK overall average of sub-regions” SCEEP actions.

Central Kootenay Regional District Unincorporated Areas		Years reduction occurs				
Actions	Already done / ongoing	2016	2017	2018	2019	
		1 Buildings Basics				
1.1 Promote electricity, natural gas, & other energy efficiency programs	X					
1.2 District energy / renewable energy systems, e.g. solar garden			X			
1.3 Building code energy efficiency - educate & support compliance	X					
NEW ACTION: Decentralized Local Energy Production			X			
2 Buildings High-Growth Measures						
2.1 Sustainability checklist for buildings	X					
2.3 Review zoning bylaw for opportunities to encourage energy performance, with tiny / eco home zoning			X			
2.4 Density bonus for energy performance					M	
2.6 Fee rebates to encourage improved energy performance					M	
2.7 Revitalization tax exemption bylaw for buildings with improved energy performance					M	
2.8 Development Cost Charge (DCC) reductions or waivers for GHG's					M	
2.9 Development Permit Area - to enhance energy performance (e.g. orientation, landscaping)					M	
NEW ACTION: Radon Rating	X					
3 Residential Buildings						
3.1 Sign on to solar-ready building code provision					M	
3.2 Education for developers - energy efficiency & renewable energy		X				
3.3 Education for realtors - energy efficiency & renewable energy		X				
3.4 Comprehensive energy efficiency retrofit campaign (e.g. Energy Diet)		X				
3.5 Voluntary or mandatory energy labelling of existing or new homes		X				
3.6 Efficient wood stove program & bylaws	X					
3.7 Helping people source wood fuel (e.g. from community forest)					X	
4 Commercial / Institutional Buildings and Transportation						
4.1 Promote the free Business Energy Advisor assessments		X				
4.2 Encourage biomass heating through education or leading by example					X	
4.3 Convert Local Government owned streetlights to LED		X				
5 LDV Transportation Urban Form						
5.1 Land use suite "lite"	X					
5.2 Land use suite "enhanced"				X		
5.3 Street design			X			
5.4 Implement 30 km/hr speed limit in parts of the community					M	
5.5 Variable DCC's to encourage infill development						
5.6 Flow RGS, OCP, and local area plans through to zoning	X					
6 LDV Transportation – Infrastructure & Collaboration						
6.1 Active transportation planning				X		
6.2 Improve active transportation infrastructure	X					
6.3 Anti-idling campaign / bylaw				X		
6.4 Special event planning	X					
6.5 Collaborate with major employers on work-related transportation					X	
6.6 Transit suite, with community partners, School District & Interior Health				X		
6.7 Intercommunity transit services				X		
6.8 Support car share cooperatives, City vehicles for Citizens On Patrol, or donate old City vehicles	X					
6.9 Raising awareness of ride sharing and guaranteed ride home programs				M		
6.10 Low carbon and electric vehicle fuelling/charging stations					X	
6.11 Electric vehicle & e-bike awareness event					X	
7 Waste						
7.1 Organics diversion					X	
7.2 Encourage water conservation	X					
7.3 Support local food production, e.g. farmers markets, community gardens	X					
NEW ACTION: Organics diversion planning				X		
8 Enabling Actions						
8.1 Review land use & transportation plans / policies for SCEEP incorporation	X					
8.2 Organizational structure for climate action					X	
8.3 Establish a regional energy co-operative					X	
8.4 Identify green economy opportunities					X	
8.5 Leverage local government assets into community change	X					
8.6 Long-term, deep community engagement (culture change)	X					

The actions marked with an 'M' were categorised as 'maybes'.

The action number listed in the tables corresponds to its numbers in the SCEEP Actions Guide (see Appendix 2), which contains further detail. Some new actions were also created and not listed in the SCEEP Actions Guide (for further details on this see the “Unpacking Actions” sub-section). Information on FortisBC Demand Side Management (DSM) program incentives are found on the website: <http://www.fortisbc.com/Rebates/RebatesOffers/>.

Unpacking Actions from the Action Plan

The main workshop day of February 19 included an in-depth discussion of all the opportunities and actions in the three sub-regional groups.

Ways to proceed with the actions were discussed and are outlined in the table. Some Action items are noted as “Ongoing” which are already in place or occur annually. Other “Action Items” will be worked upon within the next four years or “maybe” worked upon in the timeframe.

See Appendix 3 for more detailed notes of workshop actions.

- Workshop participants were divided into three colour coded sub-regional groups. (Areas ABC – Yellow; Areas HIJK - Green and Areas DEFG – Blue). Actions were “unpacked” on a sub-regional basis. The table below reflects some of the discussion and the timing (year action to be undertaken) of the action per sub-region
- In the afternoon, workshop participants divided into overall regional groupings to “drill down” and discuss in detail three topic areas: 1. Education/Engagement. 2. Renewable Energy/District Energy Feasibility, and 3. Transportation (“Movement” including active, multi-modal and electric vehicles.).

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
Buildings - Basics			
1.1 Promote electricity, natural gas, and other energy efficiency programs	1	Education No natural gas in area Many Actions to be considered as part of education campaign Actions must be: universal and inexpensive. There is opportunity to promote and educate through tax notices and utility billing	2 Energy Scan / mapping of buildings in area to determine what makes sense for building upgrades.

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
1.2 District energy / renewable energy systems	3 Energy mapping project Consider solar project	2 Project discussion: Area I water treatment micro hydro	2
1.3 Building code energy efficiency - educate & support compliance	1	1 Support energy assessments. Education campaign: retrofits save budget and have payback.	1
New Action: Decentralized Local Energy Production		2 Have Regional District support	
Buildings – Growth Measures			
2.1 Sustainability checklist for buildings	1	Education Suggest region wide and use as tool for consistent message from building inspectors.	1
2.2 Create rezoning policy to achieve desired energy performance		Maybe	
2.3 Review zoning bylaw for opportunities to encourage energy performance	Maybe 3	Ongoing Part of OCP review	
2.4 Density bonus for energy performance	Maybe 3 Consider in Town of Creston Erickson fringe planning	Maybe Discuss cluster development Area I has done this.	

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
2.6 Fee rebates to encourage improved energy performance	1 See Action 1.3 To be incentive based	Maybe Research fee rebate partnership with CBT to offset costs. Partners: CBT	
2.7 Revitalization tax exemption bylaw for buildings with improved energy performance	3	Maybe	
2.8 Development Cost Charge (DCC) reductions or waivers, for GHG's	2 Maybe Link with Action 5.5	Maybe	
2.9 Development Permit Area (DPA) - to enhance energy performance (e.g. orientation, landscaping)	3 Maybe	Maybe Have discussion about introducing DPAs	
New Action: Radon Rating			1
Residential Buildings			
3.1 Sign on to solar-ready building code provision	4 Maybe Solar hot water in some places No blanket policy	Maybe Review idea of solar batteries	4 Where site appropriate
3.2 Education for developers – energy efficiency & renewable energy	2	1	1 Ensure education available for builders.
3.3 Education for realtors - energy efficiency & renewable energy	2	1	1
3.4 Comprehensive energy efficiency retrofit campaign (e.g. Energy Diet)	1	Education	1
3.5 Voluntary or mandatory energy labelling of existing or new homes	1	Education Must be voluntary Partner: Real Estate industry	2

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
3.7 Helping people source wood fuel (e.g. from community forest)	2 Already informal process happening in area Barrier: Provincial regulation around scavenging	Maybe Policy discussion. Air quality is issue Partner: community forests.	2 Education Promote clean burning woodstove education Partners: IH and SD8
Commercial/Institutional Building /Transportation			
4.1 Promote the free Business Energy Advisor assessments	1 Have link on RDCK website	Education	1
4.2 Encourage biomass heating through education or leading by example	4 Could be investigated	2 Slocan Valley conversation Area I project discussion	3
4.3 Convert local government owned streetlights to LED	2 New LED lights in Creston Consider for Riondel	1 RD has converted streetlights to LED. Municipalities need support. Partners: FBC/BCH	1
Light Duty Vehicle Transport / Urban Form			
5.1 Land use suite lite	2 Part of Creston OCP process for fringe areas too.	Ongoing Part of OCP review	Ongoing
5.2 Land use suite enhanced	2 Part of Creston OCP process for fringe areas too.	Ongoing Part of OCP review	

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
5.3 Street design	3 For Town of Creston	Ongoing Partner: MOTI for roads	
5.4 Implement 30 km/hr speed limit in parts of the community		Ongoing Advocacy to reduce speeds in areas of local traffic, density and driveways Need signage and enforcement Partner: MOTI	1
5.5 Variable Development Cost Charges (DCC's) to encourage infill development	2 Town of Creston Consider with Action 2.8		
5.6 Flow RGS, OCP, and LAP through to zoning		Done	3
Vehicle Transportation – Infrastructure/Collaboration			
6.1 Active transportation planning	2	Ongoing Continue advocacy for parks and recreation component Great Northern Trail Barriers: Under funding block	2
6.2 Improve active transportation infrastructure	Ongoing 3	Ongoing Continue advocacy Consider safety and links through communities Partners: BikeBC, MOTI	2

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
6.3 Anti-idling campaign / bylaw	1 To be anti idle campaign only	Education Enforcement needed for motor homes and diesel trucks.	3 Anti idling Education Partners: IH and SD
6.4 Special event planning	Done	Ongoing Many events already have camping and transportation alternatives.	Ongoing
6.5 Collaborate with major employers on work-related transportation		3	4
6.6 Transit suite	2	3 Incremental improvements have been achieved	2
6.7 Intercommunity transit services	2	3 Slocan Valley has introduced a youth community bus	2
6.8 Support car share cooperatives	Done / Maybe RDCK does this	3	Ongoing
6.9 Raising awareness of ride sharing and guaranteed ride home programs	2 Maybe	Education	
6.10 Low carbon and electric vehicle fuelling / charging stations	2	Maybe Idea to introduce battery exchange stations for EVs	3
6.11 Electric vehicle & e-bike awareness event	3	Maybe	Ongoing Nelson Hydro Green Building/Event Workshop

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
Waste			
7.1 Organics diversion	4 Maybe Household and agricultural waste Potential product Yard waste Rural area composting exists Bio-waste /carcass not likely to increase Create Solid waste management plan	2 Resource recovery for: composting, land fill gas and sludge management Planning component of organics diversion is year 1.	1 Part of resource recovery plans
7.2 Encourage water conservation	Done Bylaw provisions completed Have water inventory	1 Educate Address wildfire risk Install timers Consider rain barrels Involved in Watersmart program Partner: CBT Watersmart	Done
7.3 Support local food production, e.g. farmers markets, community gardens, community greenhouse	Done Management plan in place	1 Food security Permaculture Challenge: water barrier for irrigation and IH requires treated water Partner: Network Regional Food Council Funding application	Ongoing
New Action: Planning for organics diversion		1	

ACTIONS	Areas ABC & Creston	Areas HIJK & Castlegar/Slocan Silverton/New Denver/Nakusp	Areas DEFG & Kaslo/Nelson/Salmo
Enabling Actions			
8.1 Review land use & transportation plans / policies for SCEEP incorporation	1 Part of OCP review	Ongoing Part of OCP review	Ongoing
8.2 Organizational structure for climate action	1 Sustainability service exists	Maybe As part of a funded program consider community energy manager. Partners: Need funding	
8.3 Establish a regional energy cooperative	4 Consider solar garden	2 Maybe For discussion with Actions 1.2 and 4.2 Review Slocan IPP and Nakusp project.	
8.4 Identify green economy opportunities	Ongoing	Maybe As part of a funded program consider community energy manager. Partners: Need funding	2 Consider a Regional Community Energy Manager to develop projects, communicate ideas and manage projects on regional basis
8.5 Leverage local government assets to create expertise and community-wide change	Ongoing	Education Communicate use of gas tax funds	Ongoing
8.6 Long-term, deep community engagement (culture change)	Ongoing	Education Develop an energy culture	1

Post workshop, potential partners were identified to assist with implementation of certain Actions. These partners are listed below.

ACTIONS	RDCK Overall	FBC Support Available	CEA Support Available	Other Potential Partners
Buildings Basics				
1.1 Promote electricity, natural gas, and other energy efficiency programs	1	FBC		
1.2 District energy / renewable energy systems	2	FBC		
1.3 Building code energy efficiency - educate & support compliance/Increase Efficiency	1		CEA	
New Action: Decentralized Local Energy Production	2			
Buildings High Growth Measures				
2.1 Sustainability checklist for buildings	1	FBC	CEA	
2.3 Review zoning bylaw for opportunities to encourage energy performance	2			
2.4 Density bonus for energy performance	4M		CEA	
2.6 Fee rebates to encourage improved energy performance	3M		CEA	CBT
2.7 Revitalization tax exemption bylaw for buildings with improved energy performance	4M		CEA	
2.8 Development Cost Charge (DCC) reductions or waivers, for GHG's	3M		CEA	
2.9 Development Permit Area (DPA) - to enhance energy performance (e.g. orientated)	4M		CEA	
New Action: Radon Rating	1			
Residential Buildings				
3.1 Sign on to solar-ready building code provision	4M			
3.2 Education for developers – energy efficiency & renewable energy	1	FBC	CEA	
3.3 Education for realtors - energy efficiency & renewable energy	1	FBC	CEA	Real Estate
3.4 Comprehensive energy efficiency retrofit campaign (e.g. Energy Diet)	1	FBC		
3.5 Voluntary or mandatory energy labelling of existing or new homes	1		CEA	
3.6 Efficient wood stove program & bylaws	Done			
3.7 Helping people source wood fuel (e.g. from community forest)	3			IH, Schools, community groups
Commercial/Institutional Buildings and Transportation				
4.1 Promote the free Business Energy Advisor assessments	1	FBC		
4.2 Encourage biomass heating through education or leading by example	3		CEA	
4.3 Convert local government owned streetlights to LED	1	FBC		BC Hydro
Transportation Urban Forum				
5.1 Land use suite lite	Ongoing			
5.2 Land use suite enhanced	2			
5.3 Street design	2			IH, MOTI
5.4 Implement 30 km/hr speed limit in parts of the community	1			MOTI
5.5 Variable Development Cost Charges (DCC's) to encourage infill development	2M			
5.6 Flow RGS, OCP, and LAP through to zoning	Ongoing			
Transportation Infrastructure and Collaboration				
6.1 Active transportation planning	2			IH
6.2 Improve active transportation infrastructure	Ongoing			BikeBC, MOTI, community groups
6.3 Anti-idling campaign / bylaw	2			IH, Schools
6.4 Special event planning	Ongoing			Community groups
6.5 Collaborate with major employers on work-related transportation	4			IH, schools, major employers
6.6 Transit suite/Intercommunity Transit services	2			BC Transit
6.7 Intercommunity transit services	2			BC Transit, community groups
6.8 Support car share cooperatives	Ongoing			Kootenay car co-op
6.9 Raising awareness of ride sharing and guaranteed ride home programs	2M			Kootenay rideshare
6.10 Low carbon and electric vehicle fuelling / charging stations	3	FBC	CEA	RDI
6.11 Electric vehicle & e-bike awareness event	3			Nelson Hydro
Waste				
7.1 Organics diversion	2			
7.2 Encourage water conservation	Done			CBT
7.3 Support local food production, e.g. farmers markets, community gardens, community	Ongoing			community groups
New Action: Planning for organics diversion	1			
Enabling Actions				
8.1 Review land use & transportation plans / policies for SCEEP incorporation	Ongoing			
8.2 Organizational structure for climate action	2	FBC	CEA	Nelson Hydro
8.3 Establish a regional energy cooperative	3			Economic Development
8.4 Identify green economy opportunities	2			Economic Development
8.5 Leverage local government assets to create expertise and community-wide change	Ongoing			
8.6 Long-term, deep community engagement (culture change)	Ongoing			Schools

Potential Community Engagement Opportunities

Community engagement provides an opportunity for the local government to present the SCEEP, and to highlight some of the energy and emission reduction actions already in place. This demonstrates commitment and leadership, and sets a positive example for the community. i.e.

- Invite local experts or relevant businesses/organizations to set-up a booth at an event to share the services or products they offer that will support GHG emission reductions and energy efficiency
- Encourage input into the SCEEP through an interactive wall chart timeline of energy and emissions actions. Invite participants to add their own ideas or commitments to the timeline
- Invite FortisBC to share information about incentives or other programs that are available to encourage energy efficiency.

Next Steps

Suggested next steps for the SCEEP are:

1. Submit final Strategic Community Energy and Emissions Plan (SCEEP) to the Board, with goals, policies, and recommendations
2. Investigate model to establish a Community Energy Manager position/contract to support implementation of the SCEEP for RDCK and member municipalities at the regional level.
3. Circulate SCEEP to workshop participants for further identification of additional stakeholders to contribute, e.g. School Districts, Colleges, Economic Development / Business Community
4. Incorporate SCEEP into the Regional District policy framework, including Planning Documents and budget process.
5. Ongoing SCEEP implementation.
6. Renew by reviewing SCEEP in 3-5 years.

Incorporating	Budgeting	Monitoring	Convening	Reporting	Renewing
SCEEP into other planning documents and plans: <ul style="list-style-type: none"> • OCPs • Transportation • Solid Waste • Sustainability • Strategic 	SCEEP Actions into budgeting process	SCEEP implementation <ul style="list-style-type: none"> • Indicators for specific Actions, i.e., # home energy assessments 	Regular meetings to discuss implementation: <ul style="list-style-type: none"> • Sustainability Services Committee • Staff meetings • Committee of Whole 	Reports to Board <ul style="list-style-type: none"> • Integrate with reports on other plans. 	Prepare for plan renewal every 3-5 years.

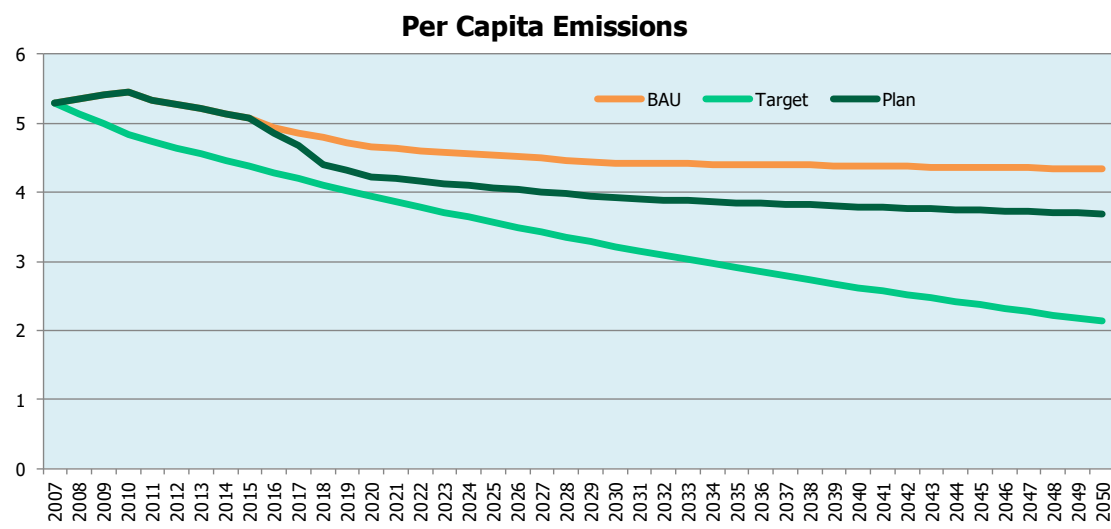
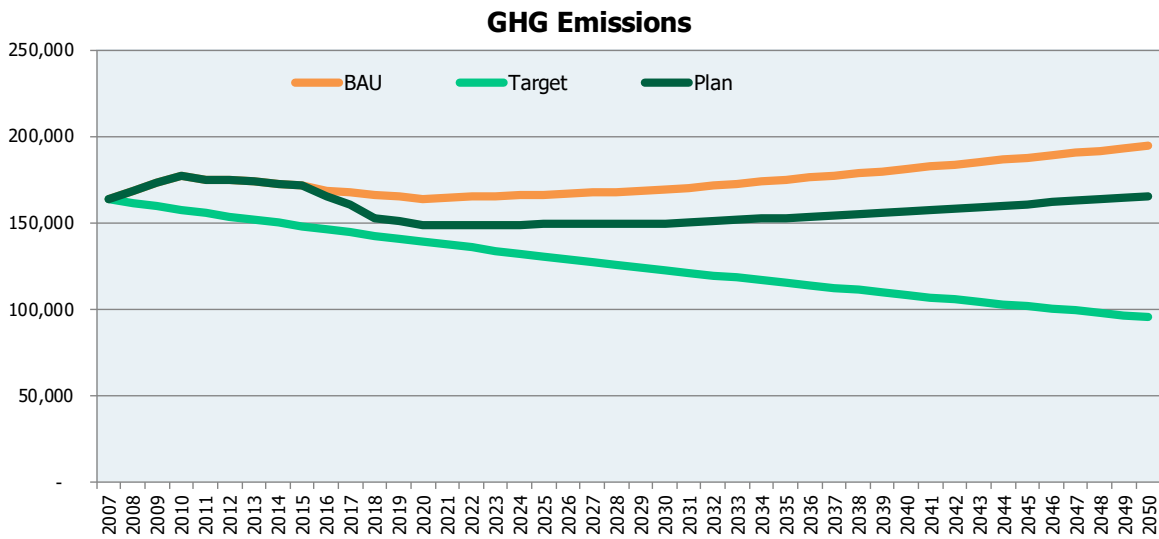
Results of Actions

The estimated impact of the plan on community greenhouse gas emissions (in tonnes of GHGs per year) is shown below. Significant emissions reductions will be achieved beyond Business As Usual, however there is still a considerable gap to the GHG target trajectory.

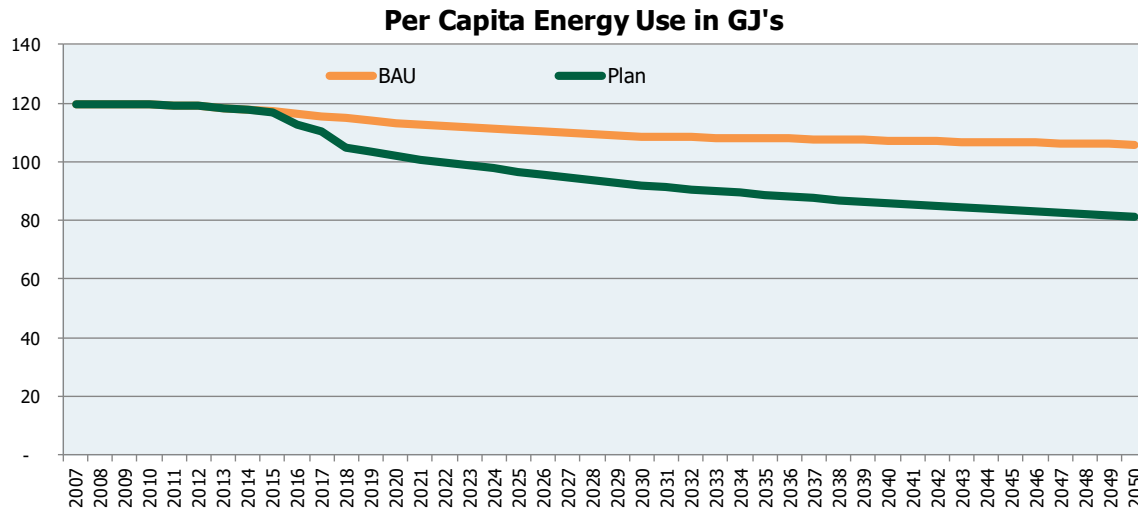
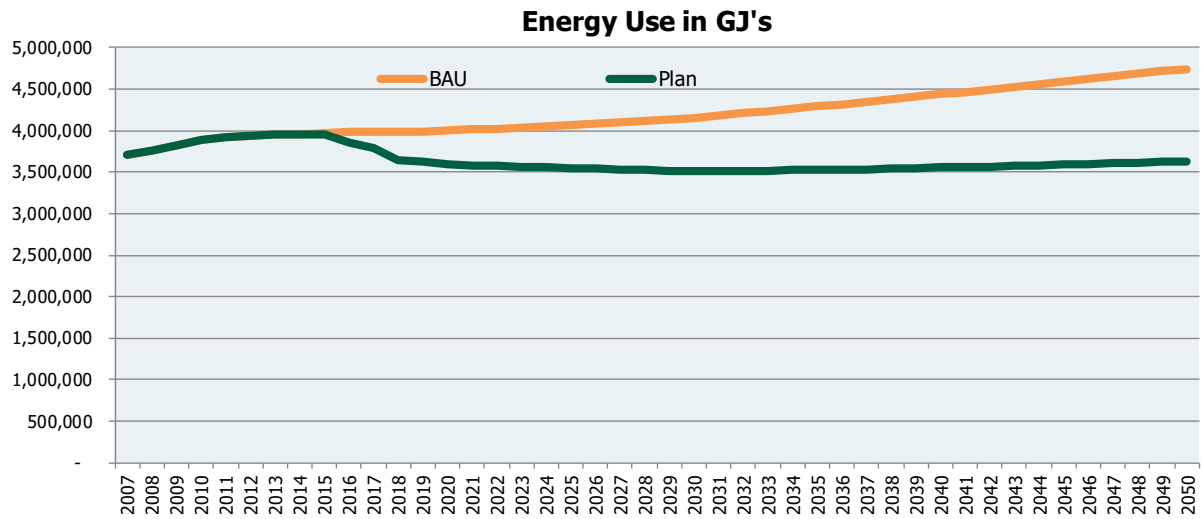
The Regional District has levers to reduce community energy and emissions and can move closer towards its target, but many things do remain outside of the Regional District’s control including Federal and Provincial actions, and technological changes. These may provide significant assistance towards meeting the target.

Note that actions to reduce electricity consumption will result in financial savings for the community, but will not result in significant savings in emissions. Electricity in BC has a very low greenhouse gas intensity, and should be carbon neutral from 2016.

Overview GHG Emissions

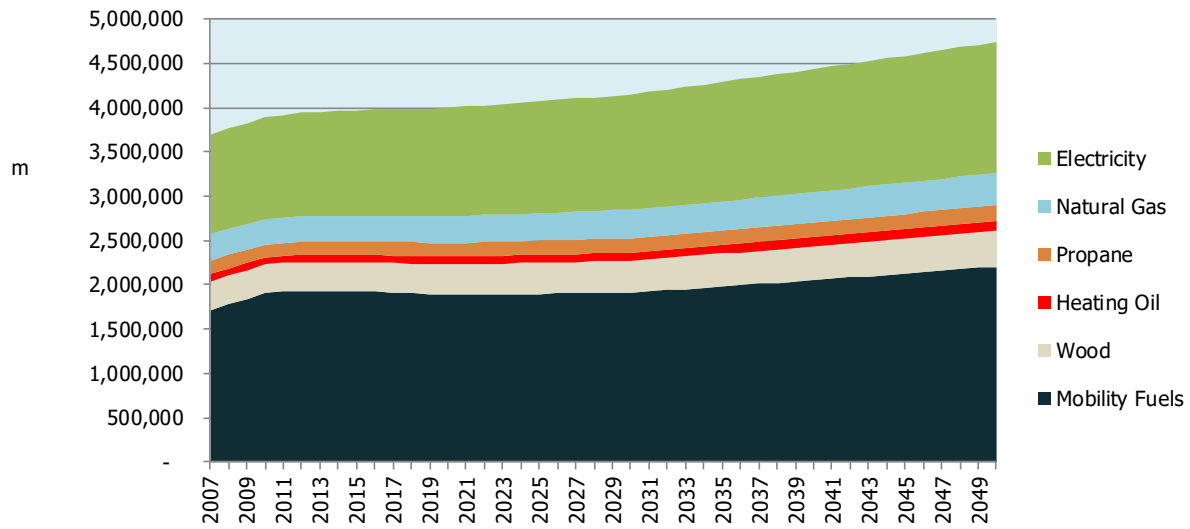


Overview Energy Use (GJ)

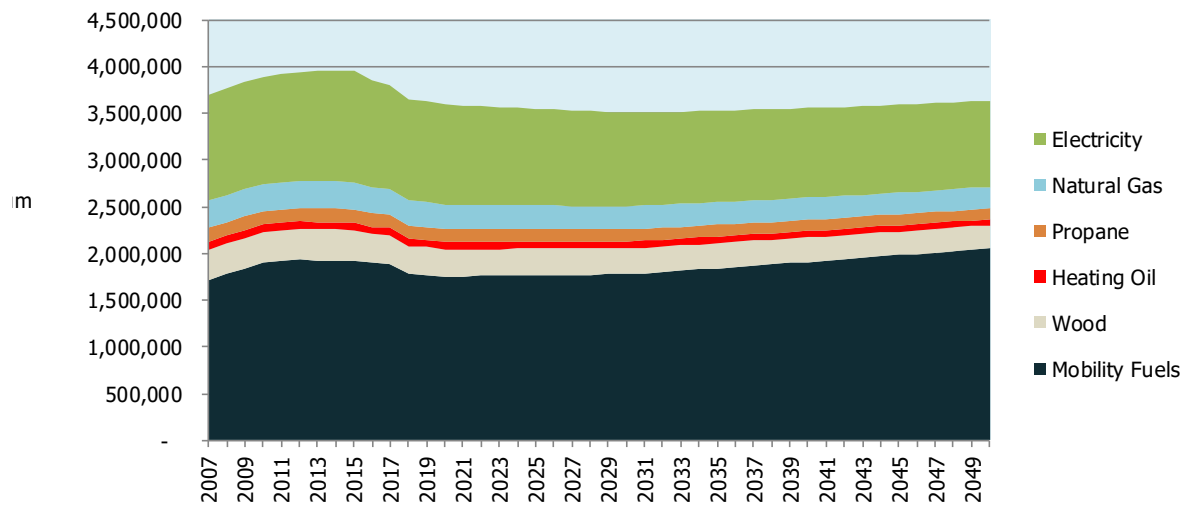


Energy Use by Fuel

BAU Energy Use by Fuel, GJ/year

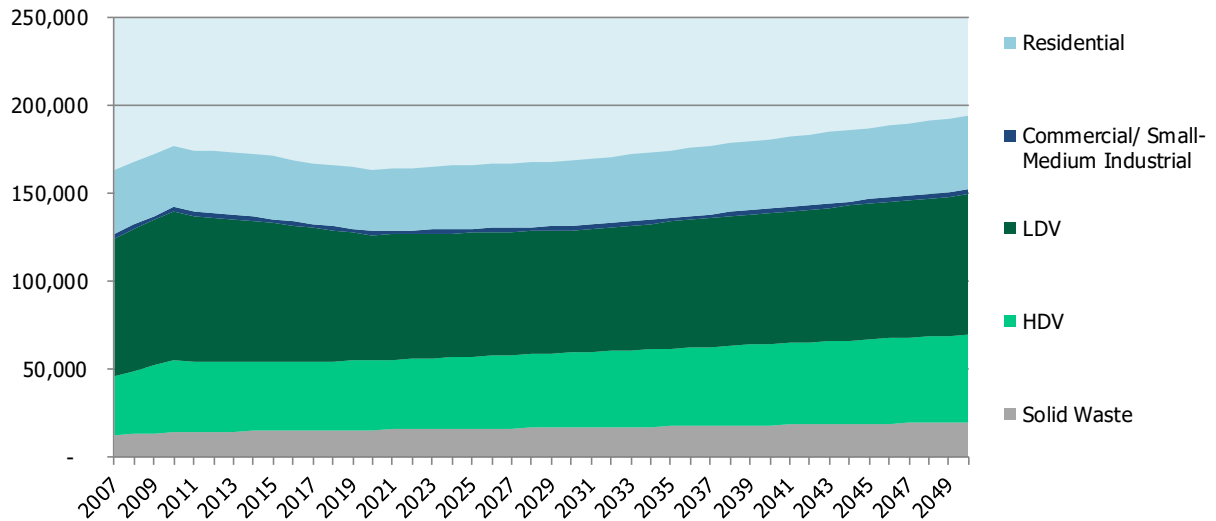


Planned Energy Use by Fuel, GJ/year

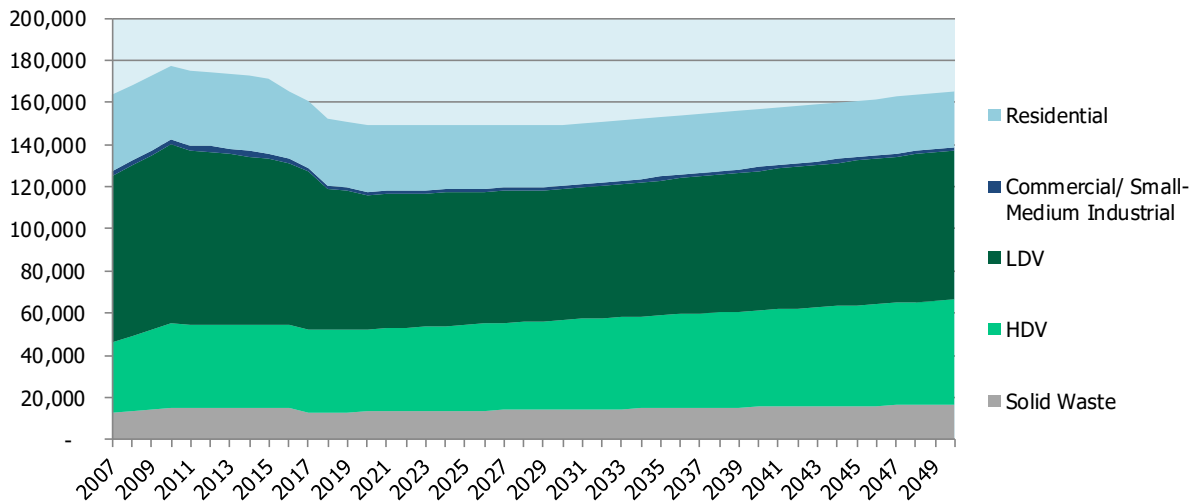


GHGs by Sector

BAU GHGs by Sector, tonnes/year

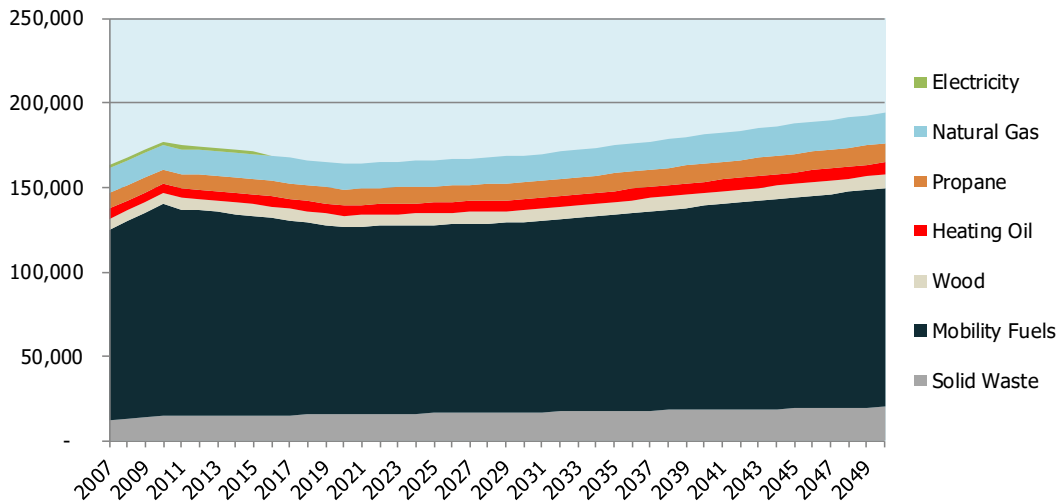


Planned GHGs by Sector, tonnes/year

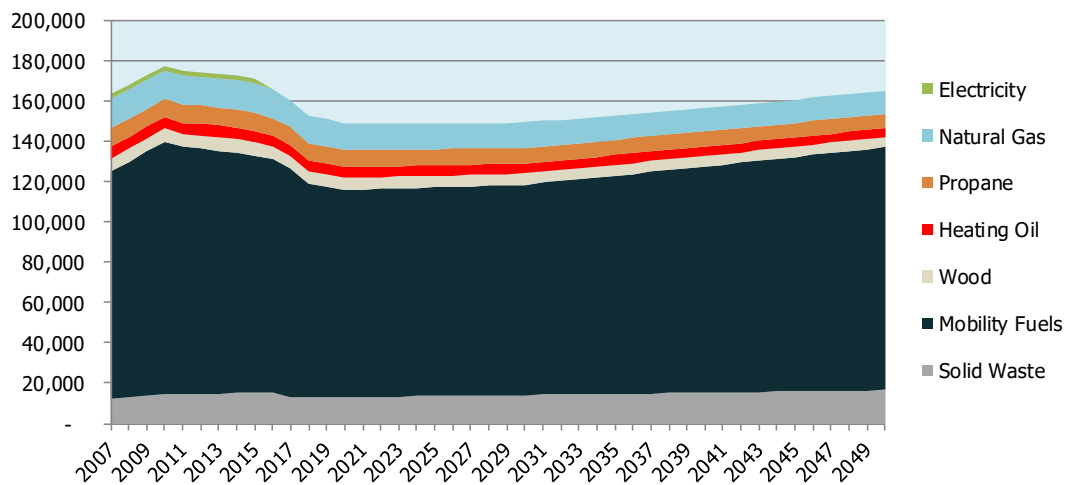


GHGs by Fuels & Waste

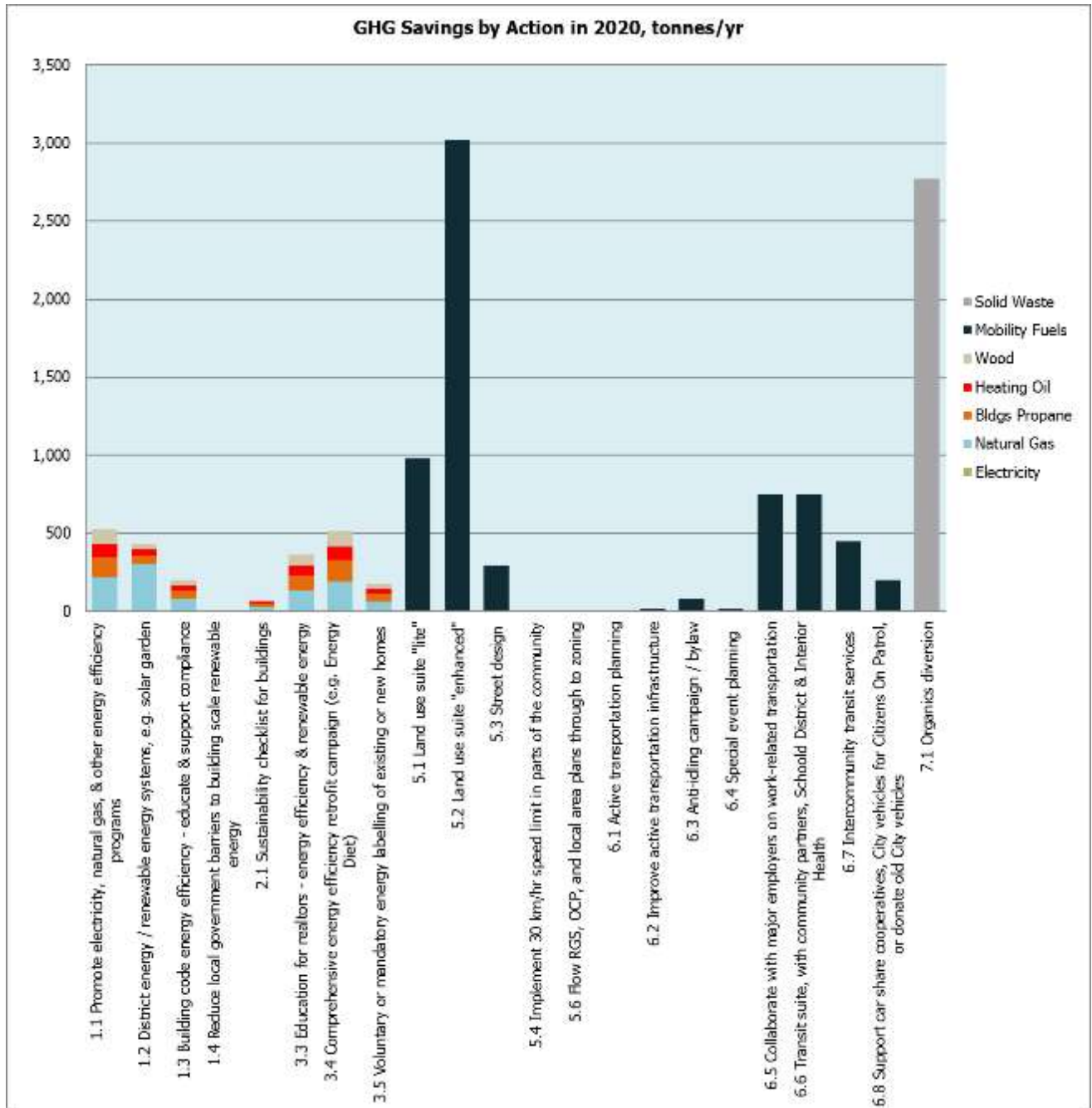
BAU GHGs by Fuels & Waste, tonnes/year

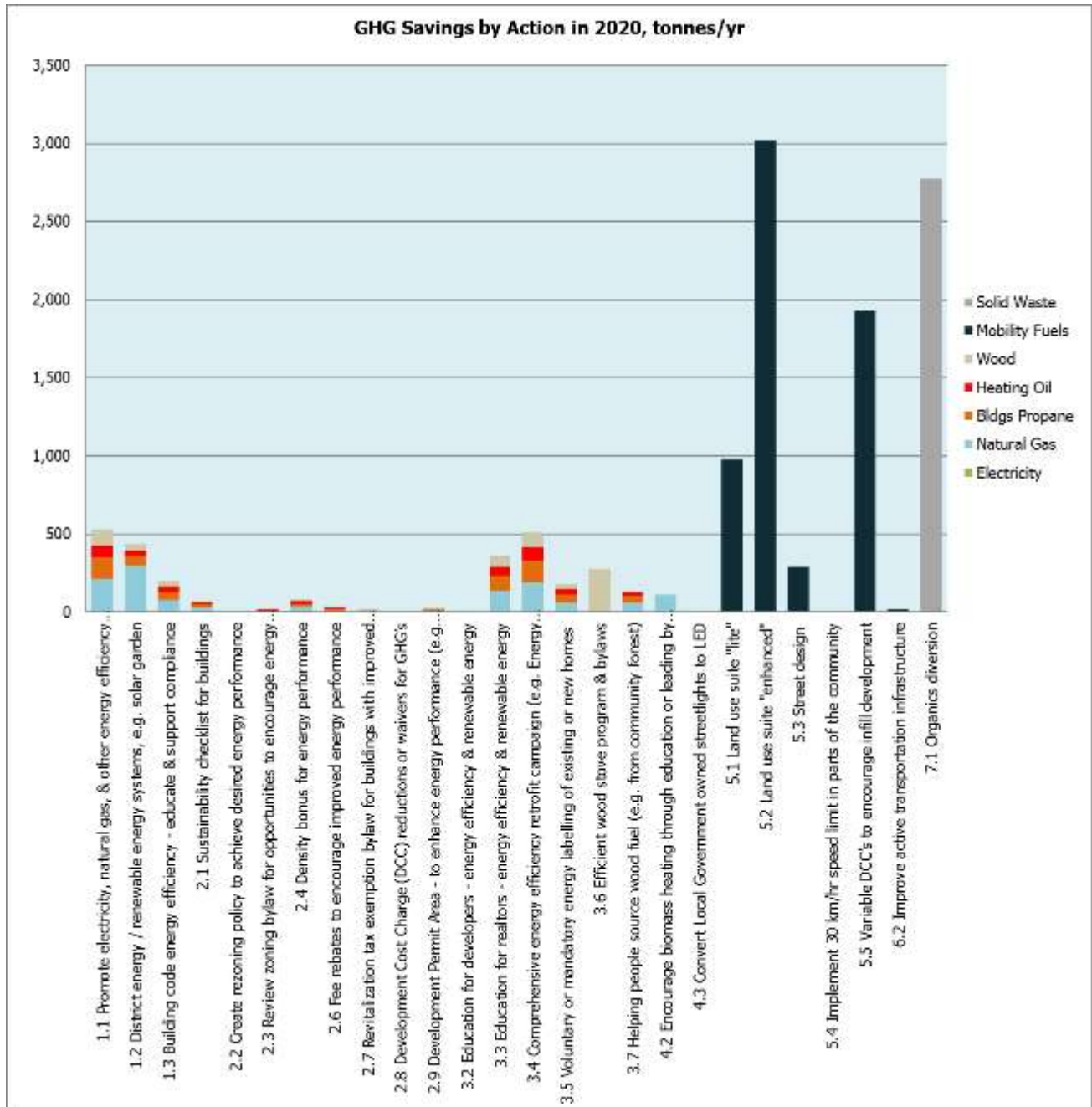


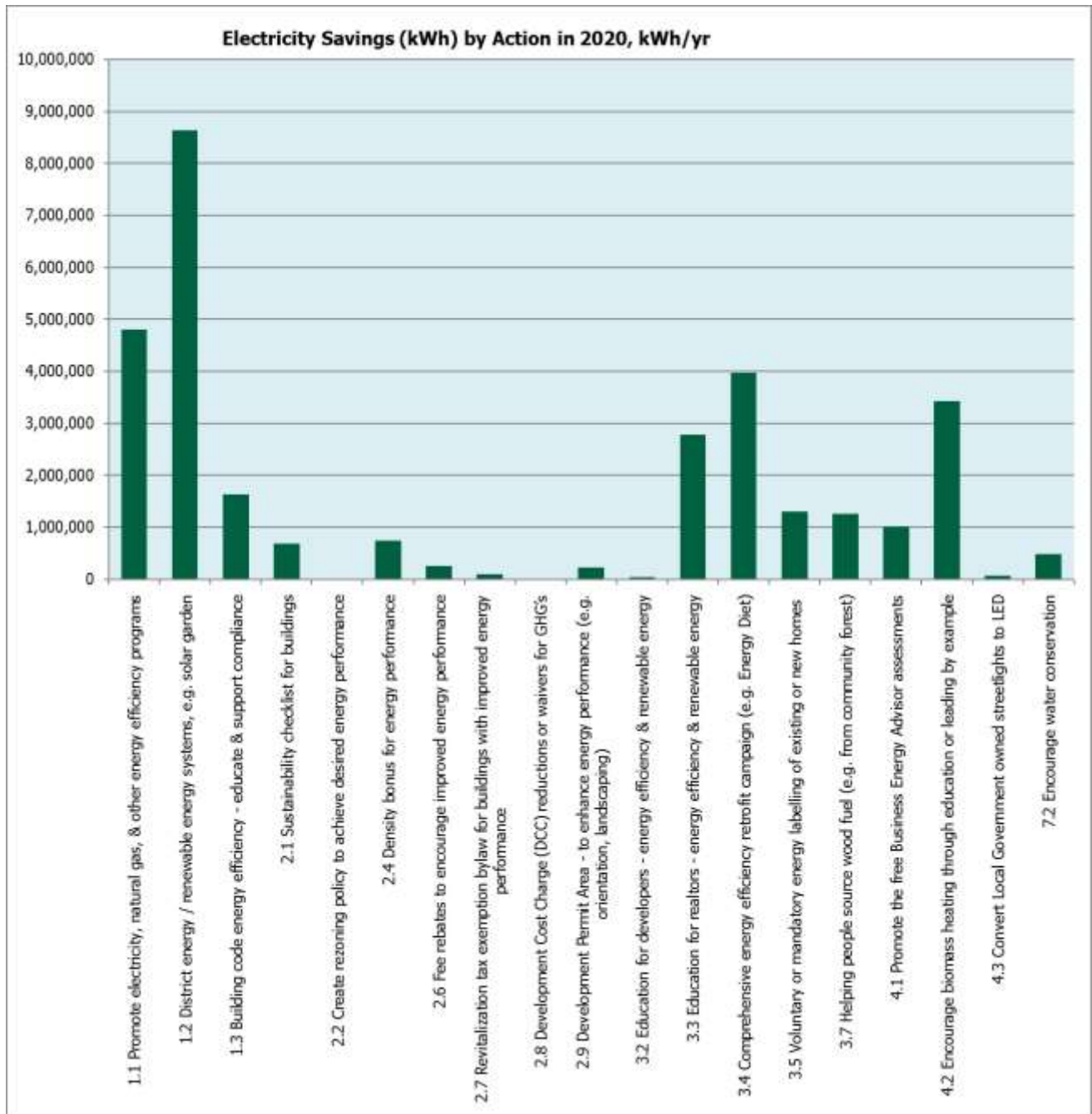
Planned GHGs by Fuels & Waste, tonnes/year



Note: The Province of BC has committed to a carbon-neutral electricity grid by 2016. In the model electricity emissions become zero from 2016 and remain there for the duration of the projected period.



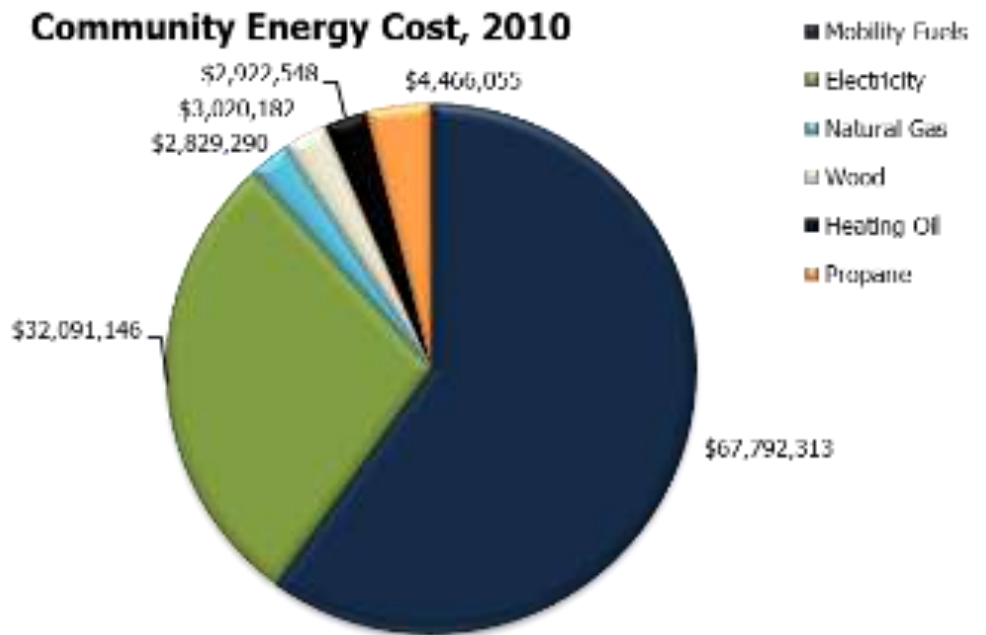




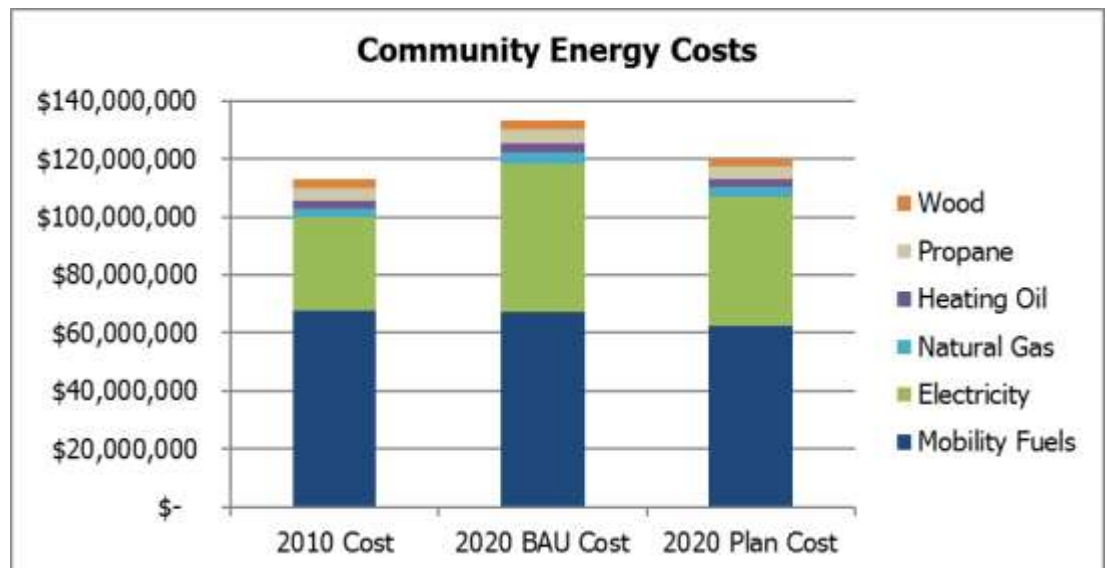
Community Financial Savings

For the Regional District of Central Kootenay, only a small percentage of the energy dollars spent within the community remain within the community. Therefore, a significant co-benefit of implementing this plan to reduce energy consumption and emissions is that reducing the energy dollars spent will help people, families, and businesses to reduce their expenses. In addition, using locally generated energy will help to keep energy dollars local rather than exporting them, just as consumption of local food helps the local economy.

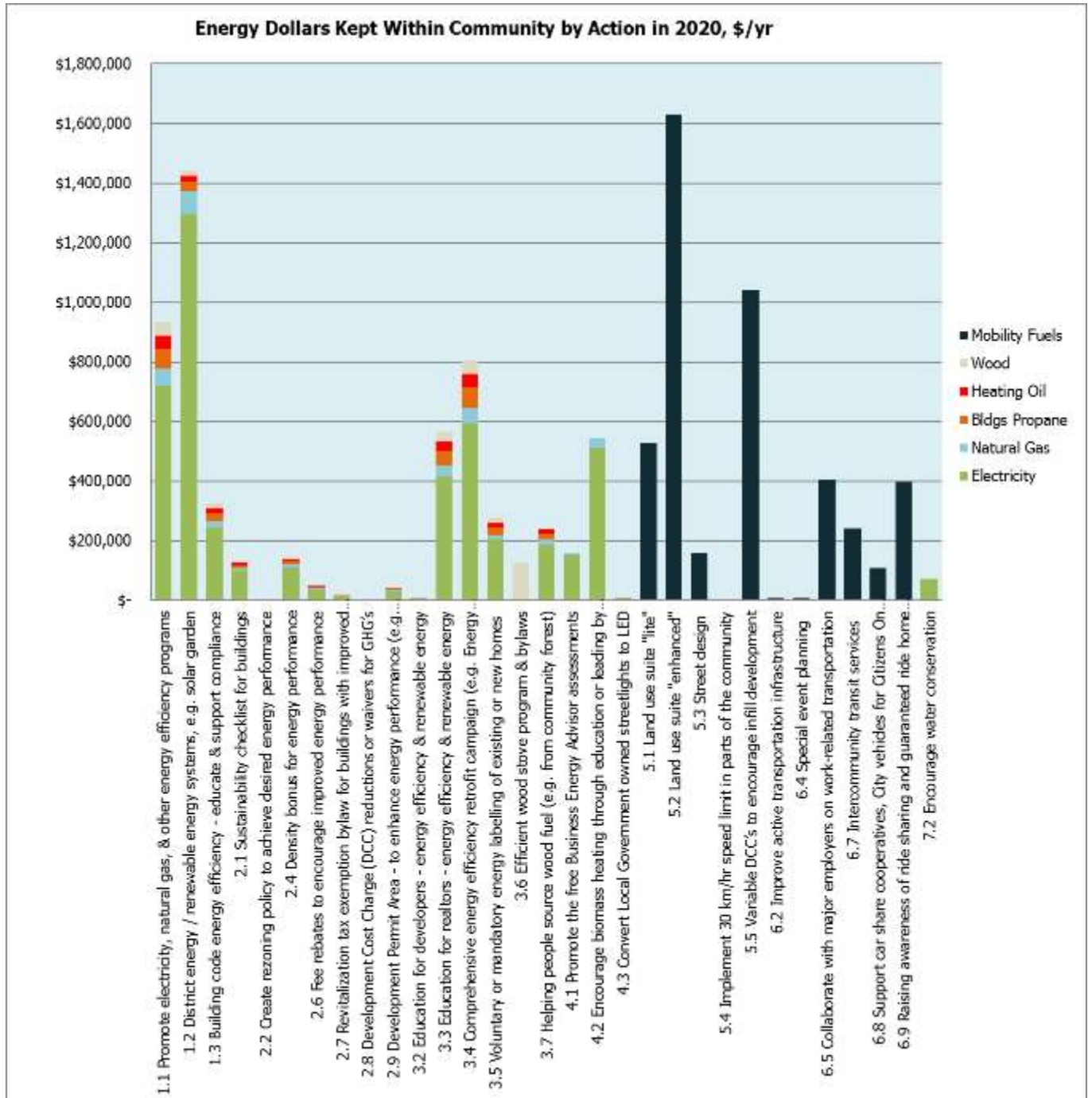
The adjacent chart shows the approximately \$113 million (\$3,500 per capita) of Central Kootenay Unincorporated Areas community energy expenditures made in 2010, split by fuel type.



The impacts of the plan are shown in the following chart, comparing 2010 and 2020. Rural community energy costs are projected to be reduced by approximately 10% through plan implementation. The model assumes that energy prices will increase to 2020. So, the 10% plan cost reduction equates to about \$13 million per year (\$430 per capita). Although energy prices are very difficult to predict, there is confidence that the price of electricity will increase over the next few years.



The following chart can be considered against estimates for the level of effort and resources needed to implement each action, for a cost benefit consideration. Note that several actions can have additional benefits, including financial benefits, that are not included in the calculation of “community energy dollars saved” (e.g. implementing land use suite “lite” and “enhanced” can reduce municipal infrastructure capital and operating cost.

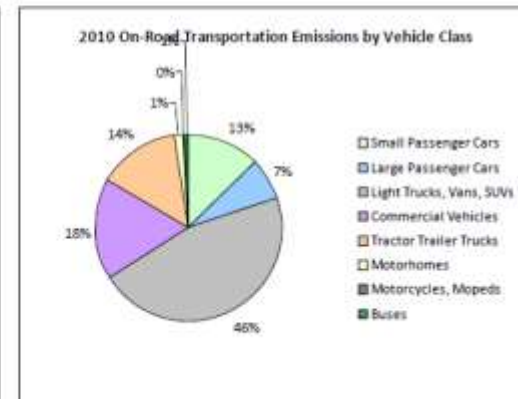
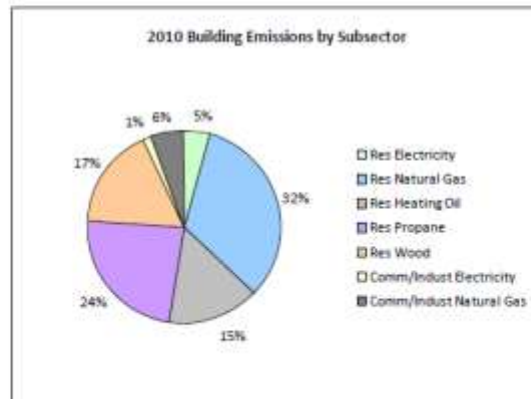
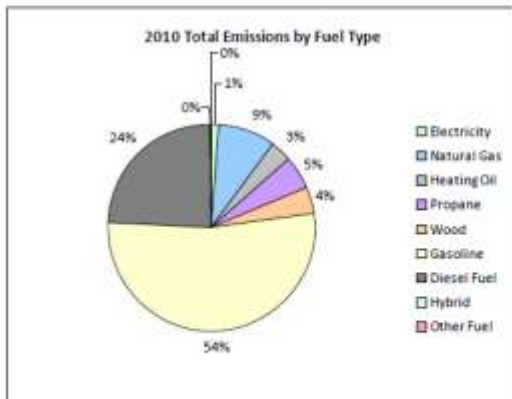
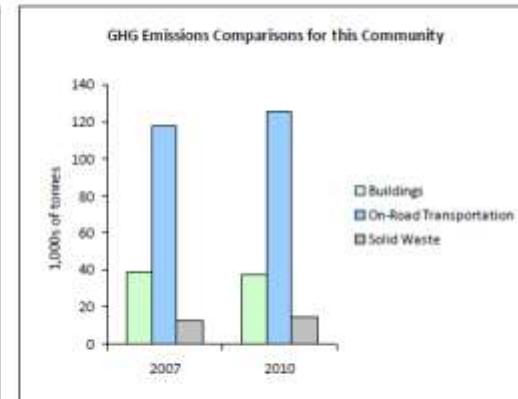
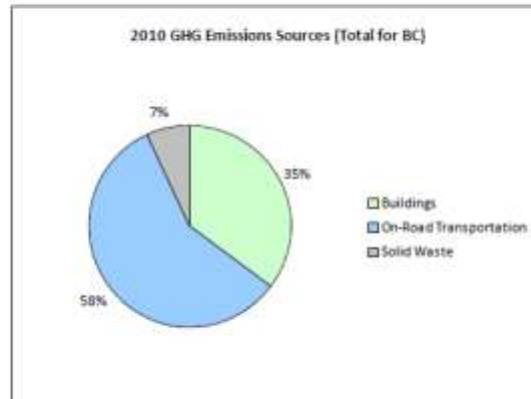
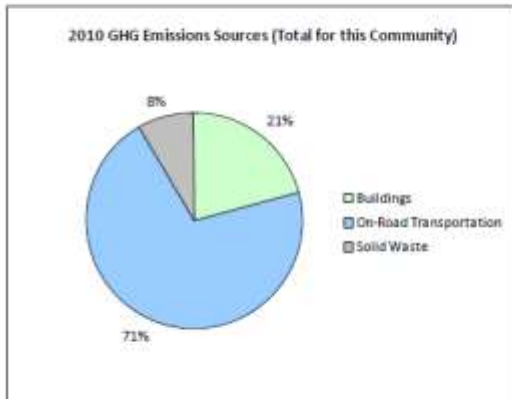


Appendix 1 – 2010 Community Energy & Emissions Inventory for Central Kootenay Unincorporated Areas



Central Kootenay Regional District Unincorporated Areas 2010 Community Energy and Emissions Inventory Monitoring and reporting on progress towards greenhouse gas emissions reduction targets

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Core Items

On-Road Transportation		2007					2010				
		Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO2e (t)	Connections	Consumption	Avg VKT (km)	Energy (GJ)	CO2e (t)
Small Passenger Cars	Hybrid			20,900	146	9			20,500	137	9
	Gasoline	4,514	6,280,202 L	15,300	219,808	15,009	4,664	6,631,580 L	15,400	232,106	14,951
	Diesel Fuel	202	313,013 L	23,100	11,989	854	219	342,486 L	22,800	13,116	908
Large Passenger Cars	Hybrid	13	14,367 L	20,800	504	33	35	39,275 L	20,500	1,374	87
	Gasoline	2,611	4,104,173 L	14,300	143,645	9,788	2,596	4,009,915 L	14,100	140,346	9,032
	Diesel Fuel	42	49,782 L	11,700	1,907	134	63	69,497 L	11,500	2,661	183
Light Trucks, Vans, SUVs	Hybrid			26,300	326	21	10	17,201 L	22,400	603	37
	Gasoline	9,226	21,418,464 L	16,400	749,647	51,474	10,139	23,884,646 L	16,600	835,963	54,316
	Diesel Fuel	663	1,303,963 L	11,200	49,943	3,549	526	1,143,135 L	12,800	43,783	3,023
	Other Fuel	76	146,302 L	11,700	3,702	223	49	84,405 L	10,400	2,136	131
Commercial Vehicles	Gasoline	790	2,172,801 L	17,100	76,048	5,104	998	2,810,645 L	17,300	98,373	6,286
	Diesel Fuel	1,295	4,282,278 L	18,600	164,011	11,523	1,619	5,984,960 L	20,800	229,226	15,626
	Other Fuel	40	96,620 L	12,800	2,445	147	23	48,598 L	12,100	1,229	75
Tractor Trailer Trucks	Diesel Fuel	278	6,489,426 L	49,900	248,544	17,462	287	6,855,454 L	49,100	262,564	17,899
Motorhomes	Gasoline	138	378,314 L	19,100	13,242	883	142	398,861 L	19,300	13,960	887
	Diesel Fuel	91	277,334 L	16,600	10,623	747	110	348,430 L	16,800	13,345	908
Motorcycles, Mopeds	Gasoline	461	91,640 L	4,600	3,207	214	577	145,106 L	5,600	5,079	320
Buses	Gasoline	11	30,182 L	18,000	1,057	71	14	38,589 L	17,500	1,351	86
	Diesel Fuel	42	255,344 L	19,400	9,780	686	44	262,000 L	27,700	10,034	684
Totals		20,493	47,704,205 L	16,138	1,710,574	117,931	22,115	47,704,205 L	16,515	1,907,386	125,448

Buildings		2007				2010			
		Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)
Residential	Wood	N/A	332,036 GJ	332,036	6,727	N/A	319,596 GJ	319,596	6,475
	Heating Oil	N/A	85,429 GJ	85,429	6,022	N/A	82,228 GJ	82,228	5,624
	Propane	N/A	150,327 GJ	150,327	9,171	N/A	144,695 GJ	144,695	8,828
	Natural Gas	3,936	254,528 GJ	254,528	12,767	3,900	241,497 GJ	241,497	12,114
	Electricity	18,292	247,083,150 kWh	889,499	1,769	17,629	255,171,638 kWh	918,617	1,817
Commercial/Small-Medium Industrial	Natural Gas	200	38,171 GJ	38,171	1,915	201	41,432 GJ	41,432	2,078
	Electricity	2,334	66,702,058 kWh	240,127	498	2,317	65,737,555 kWh	236,655	516
Totals		24,762		1,990,117	38,869	24,047		1,984,720	37,452





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Solid Waste	2007				2010				
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)	
Community Solid Waste	Solid Waste	0	15,742 t	N/A	12,546	0	21,384 t	N/A	14,619
Totals		0			12,546	0			14,619

Memo Items

Buildings	2007				2010				
	Connections	Consumption	Energy (GJ)	CO2e (t)	Connections	Consumption	Energy (GJ)	CO2e (t)	
Large Industrial	Natural Gas	5		0	0	4	0	0	
	Electricity	3		0	0	3	31,085,340 kWh	111,907	187
Totals		8		0	0	7		111,907	187

Totals for Transportation, Buildings and Solid Waste

Fuel Type	2007 (Population: 30,897)			2010 (Population: 32,558)		
	Consumption	Energy (GJ)	CO2e (t)	Consumption	Energy (GJ)	CO2e (t)
Hybrid	14,367 L	976	63	56,476 L	2,114	133
Gasoline	34,475,776 L	1,206,654	82,543	37,919,342 L	1,327,178	85,878
Diesel Fuel	12,971,140 L	496,797	34,955	15,005,962 L	574,729	39,231
Other Fuel	242,922 L	6,147	370	133,003 L	3,365	206
Wood	332,036 GJ	332,036	6,727	319,596 GJ	319,596	6,475
Heating Oil	85,429 GJ	85,429	6,022	82,228 GJ	82,228	5,624
Propane	150,327 GJ	150,327	9,171	144,695 GJ	144,695	8,828
Natural Gas	292,699 GJ	292,699	14,682	282,929 GJ	282,929	14,192
Electricity	313,785,208 kWh	1,129,626	2,267	320,909,193 kWh	1,155,272	2,333
Solid Waste	15,742 t	0	12,546	21,384 t	0	14,619
Grand Totals		3,700,691	169,346		3,892,106	177,519





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Supporting Indicators

No new supporting indicator data have been provided in the 2010 reports. Work is currently underway to produce a complete second round of data for the indicators below in the 2012 reports (available in 2014). In the interim, we are including the same supporting indicator data that was provided in the 2007 reports. Feedback is requested on all supporting indicators; please contact us directly at

Housing Type - Private dwellings by structural type

Housing type is important for reducing building-related GHG emissions and energy consumption. A trend toward fewer single family dwellings indicates an increase in residential density, which is known to reduce transportation-related GHG emissions.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Single Detached House	10,690	34	11,100	86	10,930	84
Semi-Detached House	50	0	50	0	55	0
Row House	50	0	35	0	45	0
Apartment, Duplex	150	0	140	1	150	1
Apartment, 5 storeys or higher	10	0	0	0	10	0
Apartment, under 5 storeys	85	0	130	1	105	1
Other Single Attached House	35	0	40	0	45	0
Movable Dwelling	1,215	4	1,375	11	1,650	13

Commute to Work - Employed labour force - by mode of commute

An increase in the number of people choosing to walk, cycle and use transit reduces GHG emissions. More compact, complete, connected communities should see an increase in the use of these transportation modes.

	1996		2001		2006	
	Units	%	Units	%	Units	%
Car, Truck, Van as Driver	10,085	84	10,050	85	9,865	82
Car, Truck, Van as Passenger	805	7	835	7	1,005	8
Public Transit	50	0	130	1	210	2
Walked	675	6	605	5	640	5
Bicycle	100	1	145	1	160	1
Motorcycle	35	0	0	0	25	0
Taxicab	0	0	0	0	5	0
Other Method	220	2	125	1	135	1

Parks and Protected Greenspace

Parks and protected greenspaces are important for the protection and enhancement of community carbon sinks.

	2009	
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	360,176	16
Local Parks	6,555	0
Agricultural Land Reserve	63,365	3
Other land use	1,802,413	81
Total Parks and Protected Area	366,731	16
Total Land Area	2,232,509	100

* Total is net of Indian Reserves
 ** Quantity of parkland may be underestimated

Residential Density

Increasing residential densities is known to reduce vehicle use resulting in fewer transportation-related GHG emissions. There are many additional benefits from more compact development.

	2009	
	Units	%
National Parks	0	0
Provincial Parks / Protected Areas	360,176	16
Local Parks	6,555	0
Agricultural Land Reserve	63,365	3
Other land use	1,802,413	81
Total Parks and Protected Area	366,731	16
Total Land Area	2,232,509	100

* Net of Crown land, parks, Indian Reserves, water features, airports, ALR, waste disposal site



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Supporting Indicators Under Consideration

Work is currently underway to produce a complete second round of supporting indicators for the 2012 reports (available in 2014). These reports will new data for the five supporting indicators included in the 2007 and 2010 Reports:

- **Housing Type:** Private dwellings by structural type
- **Commute to Work:** Employed labour force - by mode of commute
- **Commute Distance**
- **Residential Density**
- **Parks and Protected Greenspace**

And in addition, the 2012 reports we are working to be able to include:

- **Proximity to Transit**
- **Building Energy Intensity**
- **Building Floor Space**
- **Waste Diversion**

We are continuing to work towards reporting on even more supporting indicators in the future including:

- **Proximity to Services** (e.g. destinations such as grocery store, school, other retail etc.)
- **Transit Ridership**
- **Water Use**
- **Impervious Surface Cover:** % change in impervious surface cover
- **Tree Canopy Cover:** % change in tree canopy cover
- **District Energy:** # and energy output (e.g. buildings connected, energy consumed in GJ or kWh) of district energy systems by energy type e.g. renewable or non-renewable)
- **On-Site Renewable Energy:** # and energy output (in GJ or kWh) from households producing and/or consuming on-site renewable heat (e.g. biomass, solar thermal, geo-exchange) and/or electrical (e.g. solar photovoltaic, small wind, small scale hydro) energy
- **Energy Recovery** from waste energy (GJ or kWh) recovered from waste (e.g. from landfill gas, sewage treatment, industrial operations, farm)

Please give us feedback by contacting us directly at CEEIRPT@gov.bc.ca

Many local governments have been undertaking a significant amount of climate action in both the corporate and community-wide spheres, as demonstrated in both the public reports from the Climate Action Revenue Incentive Program (CARIP) <http://www.cscd.gov.bc.ca/lgd/greencommunities/carip.htm>, and on the <http://toolkit.bc.ca> website. These two resources may be helpful to those who are interested in learning from other BC local governments. The toolkit also contains additional information and resources including decision-support/planning frameworks and tools for undertaking actions to reduce GHG emissions and energy consumption.





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This is your local government’s 2010 Community Energy and Emissions Inventory (CEEI) Report

What is a CEEI Report?

CEEI Reports are a result of a multi-agency effort to provide a province-wide solution to assist local governments in BC to track and report on community-wide energy consumption and greenhouse gas (GHG) emissions as well as supporting indicators every two years. CEEI Reports are one of the many resources available through the Climate Action Toolkit (<http://www.toolkit.bc.ca>), a web-based service provided through the ongoing collaboration between UBCM and the Province.

Why does my local government need a CEEI Report?

A community energy and GHG emissions inventory can be a valuable tool that helps local governments plan and implement GHG and energy management strategies, while at the same time strengthening broader sustainability planning at the local level. CEEI reports fulfill local governments’ Climate Action Charter commitment to measure and report their community’s GHG emissions profile, establish a base year inventory for local governments to consider as they develop targets, policies, and actions related to BC’s Local Government Act requirements, fulfill Milestone One requirements for those local government members of the Federation of Canadian Municipalities’ (FCM’s) Partners in Climate Protection (PCP) program, as well as supporting local government efforts to monitor progress towards Regional Growth Strategy objectives.

A first in North America!

CEEI is a first in North America and a first step for BC communities. The 2010 CEEI Reports are based on best available province-wide data. The accuracy and detail of CEEI reports will continue to improve to meet increasing local and provincial government information needs. Improvements have been made from the original draft 2007 CEEI Reports posted in Spring 2009. These include estimates for residential heating oil, propane and wood use, breaking out small from large industrial buildings, including updated land-use change and new agricultural sectors as ‘memo items’. Following the 2010 CEEI Reports, inventories will be generated every two years, and will continue to improve as government information needs, international protocols and new data sources emerge.

For More Information

The full list of all BC local government 2010 CEEI Reports, User Guide, Technical Methods and Guidance Document, and additional information on the Supporting Indicators are available at: <http://www.env.gov.bc.ca/cas/mitigation/ceei/index.html> For guidance on target setting and community actions, go to <http://www.toolkit.bc.ca> and <http://www.cd.gov.bc.ca/lgd/greencommunities/targets.htm>

We Need Your Feedback

To continue to guide us on CEEI, please take the time to contact us directly at CEEIRPT@gov.bc.ca

Notice to the Reader

This CEEI Report uses information from a variety of sources to estimate GHG emissions. While the methodologies, assumptions and data used are intended to provide reasonable estimates of greenhouse gas emissions, the information presented in this report may not be appropriate for all purposes. The Province of BC and the data providers do not provide any warranty to the user or guarantee the accuracy or reliability of the data contained in this report. The user accepts responsibility for the ultimate use of such data. We need your help to make these reports better,



Appendix 2 – Actions Descriptions

The descriptions below are taken from the SCEEP Actions Guide.

1. Buildings - Basics

These actions are recommended for all local governments unless there is a compelling reason that a particular measure should not be implemented.

Action	Description
1.1 Promote electricity, natural gas, and other energy efficiency programs	<p>Key Question: This action is recommended unless there is a reason why it cannot be done.</p> <p>Description: FortisBC offers many electricity and natural gas conservation programs. At times, the Federal and Provincial governments also offer energy conservation programs. Local governments can assist in promotion of these programs, increasing awareness and encouraging local participation in residential and commercial sectors (e.g. communicating about PowerSense programs during building permit application processes), so residents and businesses can save electricity and money.</p>
	<p>% Energy Savings Calculation: Commercial = $a*b*c$, Residential = $d*e*f$</p> <p>a. % of commercial customers reached b. % of reached commercial that implement c. average improvement from implementing d. % of residential customers reached e. % of those reached that implement f. average % improvement from implementing</p> <p>Example: $(a*b*c) = (90\% * 5\% * 30\%) = 1.4\%$ (commercial buildings sector) $(d*e*f) = (90\% * 5\% * 30\%) = 1.4\%$ (residential buildings sector)</p>
1.2 District energy / renewable energy systems	<p>Key Question: Is there a source of waste heat (rink, industry, sewer pipes, wastewater treatment plant, ...) near to heat demand (pool, hospital, ...) OR are several public-sector (municipality, regional district, provincial ministry, health authority, school district, ...) facilities located close to each other?</p> <p>Description: Development permit area (DPA) guidelines can be used to require renewable energy systems external to buildings, such as a renewable district energy system. DPA's can enable the maximization of passive solar opportunities. District energy (DE) example: Revelstoke Community Energy Corporation.</p>
	<p>Calculation: Existing Residential = $a*b*c$, New Residential = $a*d*c$ Existing Commercial = $c*f*g$, New Commercial = $e*f*h$</p> <p>a. % of energy used for heating & cooling for residential (77%) b. % of existing residential connected to DE c. % reduction of energy from DE for residential d. % of new residential connected to DE e. % of energy for heating and cooling in industrial/commercial/institutional (ICI) f. % reduction in heating / cooling from DE for ICI g. % of existing ICI connected to DE h. % of new ICI connected to DE</p> <p>Example: Energy improvements in indicated sectors: $(a*b*c) = (77\% * 1\% * 66\%) = 0.3\%$ (existing residential buildings sector) $(a*d*c) = (77\% * 5\% * 66\%) = 2.5\%$ (new residential buildings sector) $(e*f*g) = (63\% * 66\% * 1\%) = 0.4\%$ (existing commercial sector) $(e*f*h) = (63\% * 66\% * 25\%) = 4.2\%$ (new commercial sector)</p>

Action	Description
<p>1.3 Building code energy efficiency - educate & support compliance</p>	<p>Key Question: Would buildings be more energy efficient with enhanced building code enforcement and inspection, and if builders / developers have a better understanding of the code?</p> <p>Description: Greening the Building Code is an ongoing provincial initiative, improving energy performance of new housing.</p> <p>The energy efficiency requirements of the BC Building Code may not be reflected in some buildings due to a lack of knowledge by builders, and limited number of required inspection or enforcement practices.</p> <p>Local governments can help fix this by:</p> <ul style="list-style-type: none"> • Changing building inspection requirements or practices. • Increasing the number of Certified Energy Assessors. • Promoting educational sessions on the BC Building Code to builders / developers in their community. The Homeowner’s Protection Office regularly runs such sessions. <hr/> <p>% Energy Savings Calculation: New Residential = a*b, New Commercial = c*d</p> <p>a. % new residential buildings captured by improved enforcement b. % improvement in new commercial buildings by energy type through better enforcement c. % new commercial buildings captured by improved enforcement d. % improvement in new residential buildings by energy type through better enforcement</p> <p>Example: (a*b) = (80% * 15%) = 12% (new residential buildings) (c*d) = (80% * 5%) = 4% (new commercial buildings)</p>
<p>1.4 Reduce local government barriers to building scale renewable energy</p>	<p>Key Question: What barriers are people aware of for building scale renewable energy systems?</p> <p>Description: Some local governments have barriers in place for building scale renewable energy systems, e.g. exceedingly high fees and requirements for the installation of solar photovoltaic panels in some communities, while minimal fees and requirements in others. The fees and costs for meeting requirements in some communities for solar systems can comprise up to 20+% of the installation cost, acting as a considerable deterrent. Barriers like these can be reduced.</p> <hr/> <p>% Energy Savings Calculation: Residential = a*b, Commercial = c*d</p> <p>a. % of homes that may install solar photovoltaics or other renewable energy systems per year b. % of annual electricity reduction for those properties that will be generated by those systems c. % of commercial buildings that may install solar photovoltaics or other renewable energy systems per year d. % of annual electricity reduction that will be generated by those systems</p> <p>Example: Energy improvements in indicated sectors: (a*b) = (0.1% * 50%) = 0.05% per year (residential buildings sector) (c*d) = (0.1% * 10%) = 0.01% per year (commercial sector)</p>

2. Buildings - Growth Measures

These measures typically have the greatest applicability in communities that are growing or are land-constrained. Communities with a low/no growth rate may also find some measures useful.

Action	Description
<p>2.1 Sustainability checklist for buildings</p>	<p>Key Question: Is the community growing?</p> <p>Description: Developers can be required to complete a sustainability or smart growth checklist as part of development permit or rezoning application processes. The checklist might include, for example, questions about sustainable energy features incorporated into new developments.</p> <p>Checklist measures are not compulsory; the aim of the checklist is to highlight local government sustainability and clean energy objectives, and to educate developers about the potential for including energy efficiency measures or renewable energy technologies in new buildings. A checklist can be combined with other policy tools in order to maximize effect.</p> <hr/> <p>% Energy Savings Calculation: New Buildings = $a*b*c$, Existing Buildings = $d*e*f$</p> <ul style="list-style-type: none"> a. % new buildings exposed to checklist b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type d. % major renovations exposed to checklist e. % of existing buildings doing major renovations f. Average % impact by energy type for major renovations <p>Example: $(a*b*c) = (90%*10%*15%) = 1.4\%$ new buildings $(d*e*f) = (90%* 1%*15%) = 0.7\%$ existing buildings</p>
<p>2.2 Create rezoning policy to achieve desired energy performance</p>	<p>Key Question: Is the community growing?</p> <p>Description: Council/Board can adopt a rezoning policy that encourages developments that are more energy efficient and/or incorporate renewable energy. Any development that requires a rezoning must be approved by Council/Board, which can consider benefits to the community as part of its decision. While the OCP lays out general expectations of the community, Council/Board can also adopt a rezoning policy, which provides a clear statement of attributes that Council/Board will seek in making rezoning decisions. It is important to note that a rezoning policy cannot set requirements for rezoning, because Councillors/Directors are required to approach rezoning hearings with an 'open mind.' However, if a development does not meet stated expectations of Council/Board, it is unlikely to be recommended by staff or approved by Council/Board. The rezoning policy must be designed carefully to be legal and effective. Example: Bowen Island Municipality.</p> <hr/> <p>% Energy Savings Calculation: $(a*b*c)$</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: $(a*b*c) = (30% * 10% * 30%) = 0.9\%$ for new buildings</p>

Action	Description
<p>2.3 Review zoning bylaw for opportunities to encourage energy performance</p>	<p>Key Question: Is the community growing?</p> <p>Description: Local governments can find opportunities to encourage energy performance through finding opportunities in the zoning bylaw. Example: City of North Vancouver reviewed their zoning bylaw and found a number of ways that better energy performance was unfairly penalized, such as homes that would install significantly greater insulation beyond the BC Building Code.</p> <hr/> <p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new homes covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (100% * 5% * 20%) = 1% for new homes</p>
<p>2.4 Density bonus for energy performance</p>	<p>Key Question: Is the community growing?</p> <p>Description: Density bonusing means that a developer may be allowed to build to a higher density than is normally permitted in the zone (in terms of floor space ratio, site coverage or buildings per parcel) in exchange for the provision of amenities. It is possible that this could be used to promote better energy performance, if GHG reduction, energy security, improved air quality and economic benefits from improved energy performance are considered community amenities. Example: City of North Vancouver has a density bonus for single family homes, duplexes, mid-rise residential, and high rise / mixed use construction.</p> <hr/> <p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) that improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (25% * 75% * 25%) = 4.7% for new buildings</p>
<p>2.5 Expediting permit approvals to encourage energy performance</p>	<p>Key Question: Is the community growing?</p> <p>Description: Expedited approvals may provide an incentive for developers, depending on how long wait times currently are. Some local governments have found that rather than delay other applications, it is better to ask a developer to pay for staff overtime so that their application can be expedited. Example: District of Saanich</p> <hr/> <p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (25% * 10% * 25%) = 0.6% for new buildings</p>

Action	Description
2.6 Fee rebates to encourage improved energy performance	<p>Key Question: Is the community growing?</p> <p>Description: Fee rebates, e.g. on building permit fees, can help to encourage more energy efficient new housing. This incentive can be matched with utility incentives for new housing for improved effectiveness. Examples: District of Invermere, Township of Langley</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new houses covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (100% * 10% * 20%) = 2% for new homes</p>
2.7 Revitalization tax exemption bylaw for buildings with improved energy performance	<p>Key Question: Is the community growing?</p> <p>Description: A Revitalization Tax Exemption (RVTE) program may be designed to encourage energy efficient development in a small area (e.g. downtown) or throughout a jurisdiction. This tool could allow property owners to make energy improvements to their property and apply for a tax exemption. The benefit of a RVTE is tied to the property. Example: District of Maple Ridge</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (25% * 10% * 25%) = 0.6% for new buildings</p>
2.8 Development Cost Charge (DCC) reductions or waivers, for GHG's	<p>Key Question: Is the community growing?</p> <p>Description: A development cost charge (DCC) reduction or exemption provides financial incentive for developers, with costs directly borne by the local government. Example: City of Penticton</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (5% * 5% * 25%) = 0.1% for new buildings</p>
2.9 Development Permit Area (DPA) - to enhance energy performance (e.g. orientation, landscaping)	<p>Key Question: Is the community growing?</p> <p>Description: Communities can use DPA guideline so that buildings, e.g. in new areas to be developed, are oriented to be south-facing, considerably reducing building energy costs. In addition, DPA guidelines can encourage or mandate water efficient landscaping, helping to reduce water consumption and associated electricity costs.</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (10% * 75% * 20%) = 1.5% for new buildings</p>

Action	Description
<p>2.10 DPA - for on-site renewable energy</p>	<p>Key Questions: Is the community growing, and is the community interested in cutting edge policy?</p> <p>Description: Communities can use DPA guidelines to encourage or mandate on-site renewable energy exterior to a building, e.g. district energy pipes, or geoexchange systems.</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new buildings covered by policy b. % of those in (a) who improve performance c. Average % impact in new buildings by energy type <p>Example: (a*b*c) = (10% * 50% * 66%) = 3.3% for new buildings</p>

3. Residential Buildings

The following actions may be applicable to residential buildings.

Action	Description
3.1 Sign on to solar-ready building code provision	<p>Key Question: This action should be considered.</p> <p>Description: The Province of BC has developed a model solar-ready bylaw (link below) http://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards/the-codes/other-regulations/solar-hot-water-ready that local governments can sign on to and implement in their jurisdictions. This bylaw reduces the cost of installing solar hot water (SHW) after construction at minimal cost at construction time. Domestic hot water is approximately 30% of building energy use. Solar hot water can provide up to 50% - 60% of domestic hot water use cost effectively. Applies to residential only.</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % of new residential that is single family b. % of new residential that installs SHW c. Average % reduction on total household fuel use by fuel type from SHW (typically 30% of household energy use is hot water, typical SHW installations cover 50% of domestic hot water) improvements <p>Example: (a*b*c) = (60% * 1% * (30% * 50%)) = 0.1% for new residences</p>
3.2 Education for developers – energy efficiency & renewable energy	<p>Key Question: This action is recommended unless there is a compelling reason not to implement.</p> <p>Description: Developers make key decisions as projects are being developed, that affect the energy performance of buildings over their lifecycle. While some developers pursue high performance buildings and renewable heating/cooling systems, many lack awareness of these systems and view them as increasing cost and risk. Education and showcasing can build awareness that leads to action. Applies primarily to residential development.</p>
	<p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % of development community reached b. % of those in (a) who integrate energy improvements into their developments c. Average % impact by energy type of improvements <p>Example: (a*b*c) = (20% * 10% * 20%) = 0.4% for new buildings</p>
3.3 Education for realtors - energy efficiency & renewable energy	<p>Key Question: This action should be considered.</p> <p>Description: Realtors help homeowners with their purchasing decisions, but many lack knowledge of energy efficiency and what EnerGuide or ENERGY STAR® for New Homes ratings are. This is despite the fact that energy costs can be significant for a homeowner, and should be taken into account when considering affordability. This education helps to create consumer demand for energy efficiency, and can also help to set the stage for greater use of these rating systems by a local government. Example: Nanaimo.</p>

Action	Description
	<p>% Energy Savings Calculation: (a*b)</p> <p>a. % penetration into housing market b. Average % improvement in energy efficiency</p> <p>Example: (a*b) = (5% * 20%) = 1% for new & existing homes</p>
<p>3.4 Comprehensive energy efficiency retrofit campaign (e.g. Energy Diet)</p>	<p>Key Questions: Are there a lot of existing older homes in the community (built prior to 2006)? Are utility or other incentives sufficient to proceed? And how much effort and resources is the local government, utility, and/or local non-profit able to put in to a campaign?</p> <p>Description: Energy efficiency retrofit campaigns in BC have been very successful in increasing the energy efficiency of the existing housing stock. The most successful campaigns take place at times of high rebate levels from utilities, Provincial or Federal government, and have local government participation as well. CEA has written a comprehensive publication on these campaigns, which can be found here: http://communityenergy.bc.ca/download/947/. It may be worthwhile to still conduct a campaign even when incentive levels are not particularly high, and/or when a local government, utility, or local non-profit cannot put in significant effort or resources towards a campaign. Examples: Rossland Energy Diet, Nelson EcoSave.</p> <hr/> <p>% Energy Savings Calculation: (a*b*c)</p> <p>a. % of existing housing stock built before 2006 b. % of those in (a) who are reached through the campaign and incorporate energy improvements c. Average % impact by energy type of improvements</p> <p>Example: (a*b*c) = (75% * 10% * 20%) = 1.5% for existing homes</p>

Action	Description
<p>3.5 Voluntary or mandatory energy labelling of existing or new homes</p>	<p>Key Questions: Are there a lot of existing older homes in the community (built prior to 2006)? And/or could residents benefit from education on energy efficiency?</p> <p>Description: Local governments can encourage or mandate energy labelling of existing and/or new homes.</p> <p>Labelling of new homes can be encouraged or mandated at the point of sale, while for existing homes it can also take place at the point of renovation. Energy labelling can be conducted through EnerGuide ratings, which are the most widely used form of residential energy labelling in Canada, and was developed by Natural Resources Canada.</p> <p>EnerGuide ratings on homes can help a prospective homeowner compare different homes according to their energy efficiency, and thus allows the market to assign a value to this. It also provides encouragement to homeowners and builders to improve energy efficiency. Plus, EnerGuide ratings are educational, they come supplied with reports identifying ways homes can have their energy efficiency improved. The cost for existing homes is \$325 + taxes and travel, and the cost for new homes ranges from \$450-700.</p> <p>Local governments can choose to make this voluntary or mandatory. Voluntary applications should likely include incentives to reduce the cost of EnerGuide ratings in order to improve uptake. Both voluntary and mandatory applications should likely be coupled with education, e.g. for realtors.</p> <p>Example: City of Vancouver has made EnerGuide ratings mandatory for all homes undergoing renovations with a value of \$5,000 or greater (with some exemptions). Note that the City of Victoria has received a legal opinion which states that local governments have the authority to require energy audits as a condition of obtaining a building permit (existing or new homes), provided it is done by bylaw.</p> <hr/> <p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % of houses that will undergo assessments each year b. % of those in (a) that will improve energy efficiency c. Average % impact by energy type of improvements <p>Example: (a*b*c) = (5% * 50% * 20%) = 0.5%, <i>per year</i></p>

Action	Description
<p>3.6 Efficient wood stove program & bylaws</p>	<p>Key Question: Do many residents use inefficient wood fireplaces / stoves?</p> <p>Description: The Provincial Wood Stove Exchange Program encourages residents to change out their older, smoky wood stoves for low-emission appliances — including new CSA-/EPA-certified clean-burning wood stoves. Offered at the community level, the program involves funding and incentives to promote the exchange and replacement of old wood stoves. It also delivers education to help people operate their wood-burning appliances efficiently.</p> <p>In the Skeena region, communities contributed between \$7,000 and \$15,000 to offer their residents extra incentives. In addition, permit fees for installation of new appliances were waived, and additional incentives were established in the form of bylaws requiring mandatory removal of old wood stoves.</p> <p>Also, the City of Duncan has put in place a bylaw whereby any property sold must have wood burning stoves removed if they are not CSA / EPA certified.</p> <p>Many communities also hold workshops on clean & safe operation of woodstoves.</p> <p>Note: assumes increased efficiency of burning, results in less wood being consumed, and has little impact on fossil fuels and GHGs (since wood-burning is considered low carbon).</p> <hr/> <p>% Energy Savings Calculation: (<i>for wood fuel only</i>) = (a*b)</p> <p>a. % of wood-stoves changed as a result of the program b. Average % improvement in efficiency per stove</p> <p>Example: (a*b) = (10% * 40%) = 4% for wood fuel for existing homes</p>
<p>3.7 Helping people source wood fuel (e.g. from community forest)</p>	<p>Key Question: Do many residents struggle to source wood fuel for their stoves, at a reasonable price?</p> <p>Description: In some rural BC communities it can be difficult to source wood fuel for wood stoves, due to restrictions on the use of waste material from the forestry industry. A local government or local non-profit may be able to help people source wood fuel, e.g. if there is a community forest, and using the waste wood from its operations.</p> <hr/> <p>% Energy Savings Calculation: (<i>all building energy types except wood fuel</i>)</p> <p>a. % of people who use the cheaper sourced wood fuel b. % decrease in use of other energy types</p> <p>Example: (a*b) = (5% * 10%) = 0.5% for existing buildings</p>

4. Commercial / Institutional Buildings and Transportation

The following measures apply to the commercial / institutional sector. Note that there are likely other specific opportunities to engage this sector in specific communities.

Action	Description
<p>4.1 Promote the free Business Energy Advisor assessments</p>	<p>Key Question: Are there small and mid-sized businesses that are genuinely interested in conducting energy efficiency upgrades to help eliminate energy waste and improve profitability?</p> <p>Description: Thanks to FortisBC and BC Hydro, free energy efficiency assessments are available for small and mid-sized businesses through the Business Energy Advisor (BEA) program. A BEA can help you understand what your energy-efficiency opportunities are, and show you how to take advantage of rebates and programs. Assessments are focussed on businesses that are genuinely interested in making upgrades. Local governments can promote the BEA program through its channels, e.g. Chamber of Commerce, information with business licence renewals, local newsletter, and website.</p> <hr/> <p>% Energy Savings Calculation: for commercial sector buildings= (a*b)</p> <p>a. % of commercial sector that take up the offer b. % improvement in building energy efficiency as a result of participating in the program</p> <p>Example: (a*b) = (10% * 15%) = 1.5% for existing commercial buildings</p>
<p>4.2 Encourage biomass heating through education or leading by example</p>	<p>Key Question: Is there a local or regional biomass supply that could be used for heating?</p> <p>Description: Buildings heating primarily with propane, heating oil, or in some cases electricity may have a strong financial case for conversion to automated forms of bioenergy such as wood pellet and woodchip. The reasons that some buildings may have not yet converted to wood pellet, despite the substantial cost savings in energy include knowledge and capital costs. Commercial buildings can be excellent candidates. Biomass heating can also have good potential for local economic development, through developing local wood fuel supply chains. Note that modern biomass heating systems are extremely clean burning.</p> <p>Local governments can encourage biomass heating through education or leading by example (biomass installations in local government buildings).</p> <p>Wood Waste 2 Rural Heat (www.woodwastetoruralheat.com) is an unbiased non-profit resource that local governments can draw upon for assistance. In addition, the Community Energy Association has written two comprehensive publications on biomass heating, which can be found here: http://communityenergy.bc.ca/?dln_download_category=heating</p> <p>Further calculations available in "Option 1B: Project Profile Efficient Building Retrofits and Fuel Switching" at the 'how' tab of www.toolkit.bc.ca/carbon-neutral-government.</p>

Action	Description
	<p>% Emissions Savings Calculation = (a*b*c)</p> <ul style="list-style-type: none"> a. % of existing buildings that convert to biomass b. %of building GHG’s associated with space heating c. %of heat load that biomass covers <p>Example: (a*b*c) = (10%*70%*80%) = 5.6%, for commercial buildings</p>
<p>4.3 Convert local government owned streetlights to LED</p>	<p>Key Question: This action is recommended unless there is a compelling reason not to implement.</p> <p>Description: Although this is a corporate action, it is very popular among local governments, and can also be very visible to a community, providing a good example of leading by example. It could help to encourage privately owned outdoor lights to convert to LED as well. Note that in most communities, a portion of streetlights are owned by the utility, and another portion are owned by the local government. At present, it is easier to change local government owned streetlights to LED than utility owned streetlights.</p> <hr/> <p>% Emissions Savings Calculation = (a*b) (electricity only)</p> <ul style="list-style-type: none"> a. % of community commercial electricity consumption associated with local government owned streetlights b. % of reduction in electricity consumption <p>Example: (a*b) = (0.3%*30%) = 0.1%, for commercial electricity</p>

5. Light Duty Vehicle Transportation – Urban Form

Urban form including smart growth and street design offer the greatest single opportunity for many communities to reduce emissions.

Action	Description
5.1 Land use suite lite	<p>Key Question: Recommended for communities wherever politically practical.</p> <p>Description: Designate growth areas and set minimum lot sizes outside growth area; apply mixed-use zoning for downtown. This can preserve the rural character outside of downtown while enabling more residents to live in proximity to services. This can reduce transportation needs while developing areas that are most economically maintained by the local government (rather than sprawling infrastructure). Specific zoning is required for primary and secondary growth areas as well as areas outside the designated growth areas.</p> <p>Conservation covenants (such as through land trusts) may also be considered for agricultural lands or natural habitats.</p>
	<p>% Energy Savings Calculation: for Light Duty Vehicle sector= (a*b*c)</p> <ul style="list-style-type: none"> a. % of community in downtown b. Degree to which the area in (a) exhibits the full implementation of supportive land use c. % reduction in transportation emissions (see Background section for guidance on emissions reduction potential) <p>Example: (a*b*c) = (20% * 20% * 30%) = 1.2% for LDV sector</p>
5.2 Land use suite enhanced	<p>Key Question: Recommended for communities seeking significant GHG reductions</p> <p>Description: This measure extends 'Land use suite lite'. Beyond designating growth areas, urban containment boundaries could be established to further enforce where growth occurs. Also, the type of growth could be further defined through establishing zones for transit-oriented development or pedestrian-oriented development. An industrial/commercial land strategy may also be required to facilitate eco-industrial networking, transit provisioning and mobility.</p>
	<p>% Energy Savings Calculation: for LDV sector = (a*b*c)</p> <ul style="list-style-type: none"> a. % of community covered by program b. Degree to which the area in (a) exhibits the full implementation of supportive land use c. % reduction in transportation emissions (see Background section for guidance on emissions reduction potential) <p>Example: (a*b*c) = (50% * 25% * 30%) = 3.8% for LDV</p>

Action	Description
<p>5.3 Street design</p>	<p>Key Question: This action is recommended for all communities unless there is a reason why it should not be implemented.</p> <p>Description: Reconfigure streets to be 'living streets' / 'complete streets' - including formalizing hierarchy (pedestrian - bike - transit - truck - car). Typically, this is a policy decision, followed by street reconfiguration as streets are regularly scheduled for resurfacing / reconstruction for pavement maintenance or installation of utilities. If new streets are required, design to support a grid pattern.</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = (a*b*c)</p> <ul style="list-style-type: none"> a. % of community covered by program b. Degree to which the area in (a) exhibits the full implementation of supportive land use c. % reduction in transportation emissions (see Background section for guidance on emissions reduction potential) <p>Example: (a*b*c) = (5% * 25% * 30%) = 0.4% for LDV</p>
<p>5.4 Implement 30 km/hr speed limit in parts of the community</p>	<p>Key Question: Is a 30km/hr speed limit feasible in parts of the community?</p> <p>Description: A 30km/hr speed limit helps to make the community safer and more appealing for pedestrians and cyclists. It also improves accessibility around the community for people of all ages. Examples: Rossland, Wells, Summerland, Penticton</p> <hr/> <p>% Energy Savings Calculation: for LDV sector= (a*b*c)/d</p> <ul style="list-style-type: none"> a. Number of walking/cycling trips per year b. % of trips that would have been by car c. average walking/cycling trip length d. Total LDV vehicle kilometers travelled (VKT) (estimation can be derived from CEEI data) <p>Example: (a*b*c)/d = (36,500 * 20% * 1.5) / 200,000,000 = 0.01% LDV emissions</p>
<p>5.5 Variable Development Cost Charges (DCC's) to encourage infill development</p>	<p>Key Question: Is the community growing?</p> <p>Description: Some communities have flat DCC's, however real infrastructure costs can vary based on where a new building or development is located. Infrastructure costs for infill development (e.g. using existing roads and streetlights) may be much lower than for development in an outlying area. This could help encourage development near existing infrastructure, and discourage sprawl, reducing vehicle emissions.</p> <hr/> <p>% Energy Savings Calculation: (a*b*c)</p> <ul style="list-style-type: none"> a. % new developments covered by policy b. % of those in (a) who locate closer to existing infrastructure c. Average % reduction in trip distances achieved <p>Example: (a*b*c) = (100% * 10% * 25%) = 2.5% reduction in vehicle emissions</p>

Action	Description
<p>5.6 Flow RGS, OCP, and LAP through to zoning</p>	<p>Key Question: Recommended for all communities.</p> <p>Description: It is important to flow climate and energy-related statements from the RGS or OCP through to local area / neighbourhood plans and zoning. Often good statements in the RGS/OCP just need to be implemented all the way through in a rigorous way.</p>
	<p>% Energy Savings Calculation: N/A – depends on OCP policies.</p>

6. Vehicle Transportation – Infrastructure & Collaboration

Action	Description
<p>6.1 Active transportation planning</p>	<p>Key Question: This action is recommended for all communities considering transportation demand management.</p> <p>Description: Active transportation planning processes can lead to future policy and infrastructure changes. A number of communities have researched, developed and planned active transportation initiatives through funding grants offered by the Built Environment and Active Transportation (BEAT) initiative of the BC Recreation and Parks Association (BCRPA) and UBCM. Many of these communities are small yet have started ambitious active transportation plans. Such programs can kick-start a transportation demand management (TDM) program for small or mid-size communities, especially those with little or no public transit.</p>
	<p>Calculation: N/A - this is a planning process which will not produce direct results itself, but may lead to projects that will produce savings.</p>
<p>6.2 Improve active transportation infrastructure</p>	<p>Key Question: Are there major trip destinations (commercial services, schools, hospital, employers, etc.) less than 3km from a significant number of residences for walking, and within 5-8km for cycling?</p> <p>Description: Local governments can easily promote walking. Walking is suitable for trips in small and mid-size communities where distances in town are short. Most people can walk a kilometre in 10 minutes and can walk for 30 minutes, or approximately 3 km, during good-weather months. It is reasonable to target distances of 3 km or less for the promotion of active transportation (if combined with strategies to change people’s perception of the time and effort it takes to walk).</p> <p>Cycling is perhaps the fastest way to make a trip of less than 5 km. It is reasonable to target distances of 5 to 8 km for cycling in an active transportation strategy. Cyclists travelling 8 km or more value shower facilities at their final destination, and all cyclists value safe, secure storage for their bikes. These facilities can be installed at various sites of employment in a community, such as public institutions, businesses and regional district or municipal offices. A major barrier to increasing the number of cycling trips to workplaces is lack of secure bike lock-ups and change-room facilities. Requiring these basic facilities can be made part of the development process through a community’s planning bylaw.</p> <p>Online tools and guidance to estimate the demand for bike routes is available. In BC, it is estimated that 2% of all trips are by bike as a default.</p> <p>Other important parameters include percentage of cyclists using the bike route that would otherwise have driven, and average bike trip length. Where locally-specific data are not available, the following benchmarks may be used:</p> <ul style="list-style-type: none"> • % of non-recreational cyclists who would have driven, if they were not cycling: 50%. • Average BC cycling commuter distance: 5km each way, 10km return trip.

Action	Description
	<p>% Energy Savings Calculation: for LDV sector= $(a*b*c)/d$</p> <ul style="list-style-type: none"> a. Number of active transportation trips/year b. % of trips that would have been by car c. average trip length d. Total LDV vehicle kilometers travelled (VKT) (estimation can be derived from CEEI data) <p>Example: $(a*b*c)/d = (36,500 * 25% * 4) / 200,000,000 = 0.02\%$ LDV emissions</p>
<p>6.3 Anti-idling campaign / bylaw</p>	<p>Key Question: Do a significant number of people idle vehicles in the community?</p> <p>Description: Natural Resources Canada has the position that idling for over 10 seconds uses more fuel, costs more money, and produces more CO₂ emissions than restarting your engine. There can also be substantial air quality savings.</p> <p>Many communities in BC have bylaws in place that prohibit idling at certain times of the year in certain places. Good places to target may be at schools and nurseries, in order to help protect the health of children. Outside the municipal office can also help to set a good example, and can be an easy place to enforce.</p> <p>Northern Rockies Regional Municipality has an innovative approach, using a carrot rather than a stick to encourage people not to idle. The municipality runs a campaign called "Idle-less October" in Fort Nelson, with sweet treats left on the windshields of non-idling vehicles and labels saying "Thank you for not idling!".</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = $(a*b)$</p> <ul style="list-style-type: none"> a. Estimated LDV fuel consumption from idling b. Estimated reduction from anti-idling activities <p>Example: $(a*b) = (1% * 10%) = 0.1\%$ LDV emissions</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = $(a*b*c)/d$</p> <ul style="list-style-type: none"> c. Number of cycling trips/year d. % of trips that would have been by car e. average cycling trip length f. Total LDV vehicle kilometers travelled <p>Example: $(a*b*c)/d = (36,500 * 30% * 5) / 200,000,000 = 0.03\%$ LDV emissions</p> <p>This calculation methodology is only relevant where bicycle facilities are constructed on commuter routes, or to other major destinations to which people travel by car. Recreational bike paths will not lead to a reduction in emissions, and may even lead to an increase in emissions, since people may drive to them.</p>

Action	Description
<p>6.4 Special event planning</p>	<p>Key Question: Are large special events planned?</p> <p>Description: Local governments often promote transit for transportation to major community or sporting events in their area. There are direct benefits to having people try alternative modes of transportation during large events. Experience has shown that people will be more likely (at worst, less reluctant) to use transit after having a good experience at a special event. This was the case in Victoria in 1994 when a 12-day major sporting event saw record modal splits for transit (50% and up), which set the stage for an impressive five-year growth in ridership.</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = (a*b*c)</p> <p>a. % of LDV travel associated with travel to/from event b. % of travel population in (b) affected by action c. Average % reduction in vehicle kilometers travelled by population in (c)</p> <p>Example: (a*b*c) = (1% * 20% * 10%) = 0.002% LDV sector</p>
<p>6.5 Collaborate with major employers on work-related transportation</p>	<p>Key Question: Is there a major employer(s) in the community?</p> <p>Description: Collaboration with major employers such as industries, schools and hospitals can uncover opportunities to reduce commuting-related transportation emissions.</p> <p>UVic achieved a 27% reduction in campus parking during a 30% growth in student population and major new building activity in the past 16 years. Single-occupant vehicle traffic to campus plunged from 58% in 1992 to 37.5% in 2008, while parking rates soared from minimally priced to market-rate priced.</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = (a*b*c)</p> <p>a. % of LDV travel associated with travel to/from employer/institution b. % of travel population in (a) affected by action c. Average % reduction in vehicle kilometers travelled by population in (b)</p> <p>Example: (a*b*c) = (10% * 50% * 20%) = 1.0% LDV emissions</p>

Action	Description
<p>6.6 Transit suite</p>	<p>Key Question: Are there major trip destinations beyond 8km that are not sufficiently served by transit?</p> <p>Description: There are 82 transit systems serving 50 communities in BC. Three types of transit service are operated through BC Transit: conventional transit, paratransit and custom transit.</p> <ul style="list-style-type: none"> • Conventional transit serves the general population using mid-size, large or double-decker buses with fixed routes and fixed schedules. Most buses are fully wheelchair accessible, with door ramps that lower. • Paratransit offers small-town, rural and suburban areas flexible routing and schedules for passengers using minibuses, taxis and vans. Many paratransit systems offer trips beyond their immediate community one or more days a week. • Custom transit serves those who cannot use conventional transit because of a disability. It operates vans and minibuses for dial-a-ride, door-to-door handyDART service. Service is also offered through contracted Taxi Supplement and Taxi Saver (discounted coupon) programs. <p>Many factors affect transit deployment, key ones being residential density and form.</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = (a*b)</p> <p>a. % of population affected by transit measures (within approx. 400 meters of stops) b. Average % reduction in vehicle kilometers traveled for population in (b)</p> <p>Example: = (20% * 5%) = 1% LDV emissions</p>
<p>6.7 Intercommunity transit services</p>	<p>Key Question: Is there significant inter-community travel?</p> <p>Description: While trips between BC communities have typically relied on the private automobile, there are publicly funded transportation links between many communities, some covering distances of several hundred kilometres. These transportation links are usually established for a specific purpose and are not well known or publicized. The transit link between Vernon and UBC Okanagan in Kelowna is a key example, providing a long-distance transit link from one community to a post-secondary institution in another community. This practice is not common in small or mid-size communities and could be more widely implemented.</p> <p>Health Connections is a provincially funded program to address regional travel needs for rural residents who must travel long distances to access specialized nonemergency medical services. Regional health authorities have full discretion in how they seek to deliver this service. Service restrictions vary region to region, but many include intercommunity bus services.</p> <p>The Interior Health Authority provided an estimated 25,000 rides in 2008, with 35% of trips being medical in nature. Within the 200,000-square-kilometre Interior health region, encompassing the East Kootenay, Kootenay-Boundary, Okanagan and Thompson Cariboo Shuswap areas, these trips are a largely untapped resource for the area’s 700,000-plus residents. Few people know about this service because it is not well advertised outside of doctors’ offices and the medical community. Promoting these services is an opportunity for local governments.</p>

Action	Description
	<p>% Energy Savings Calculation: for LDV sector = (a*b*c)</p> <ul style="list-style-type: none"> a. % of population affected by inter-community transit b. % of VKT related to inter-community travel c. % of LDV trips avoided <p>Example: = (60% * 10% * 10%) = 0.6% LDV emissions</p>
<p>6.8 Support car share cooperatives</p>	<p>Key Question: Is there a sizeable population within walking distance of a potential shared vehicle?</p> <p>Description: Car cooperatives help people to become single car families, or even live in a community without owning a vehicle. This in turn can help to reduce the number of vehicle trips taken. Local governments can support car co-ops by providing them with free parking, and also enacting bylaws reducing the parking requirement for residential developments near a car share co-op space. Examples: Kootenay Carshare Coop, Okanagan Carshare Coop, MODO (Vancouver).</p> <hr/> <p>% Energy Savings Calculation: for LDV sector = (a*b*c)</p> <ul style="list-style-type: none"> a. % of population near potential car share co-op space b. % of (a) that would use the service c. % reduction in their LDV trips <p>Example: = (50% * 5% * 10%) = 0.3% LDV emissions</p>
<p>6.9 Raising awareness of ride sharing and guaranteed ride home programs</p>	<p>Key Question: Are there major trip destinations beyond 8km that are not sufficiently served by transit?</p> <p>Description: Carpooling is a simple way for local governments to begin TDM while saving money, reducing congestion and conserving energy along the way.</p> <p>Founders of the Kootenay Carshare Coop set up a ride-sharing system for longer-distance intercommunity travel where rides could be offered or sought for travel between communities. This ride-matching service is now run by the Kootenay Rideshare and is undergoing expansion; details can be found at www.kootenayrideshare.com.</p> <p>"With car sharing as a choice, Car Co-op members drive much less (1400 km/year) than the average driver (6000-24,000 km/year) in the Lower Mainland." Source: Cooperative Auto Network. (75%-94% reduction but much of this cannot be directly attributed to a coop.)</p> <p>Other ride sharing services exist, including Hitch Planet, Jack Bell, and people posting messages on websites such as Kijiji.</p> <p>Local governments can promote these services.</p> <hr/> <p>% Energy Savings Calculation: for LDV sector= (a*b)</p> <ul style="list-style-type: none"> a. % of population affected by ride-share b. Average % reduction in vehicle kilometers traveled for population in (b) <p>Example: = (10% * 10%) = 1% LDV emissions</p>

Action	Description
<p>6.10 Low carbon and electric vehicle fuelling / charging stations</p>	<p>Key Question: Can adequate resources be allocated to implement these recommended actions?</p> <p>Description: Low carbon and electric vehicles can play a significant role in reducing emissions from light duty (passenger) vehicles. Local governments can play an enabling role in this transition. Measurement may be difficult, but without this suite or a similar one, the local transition to low carbon and electric vehicles may be delayed by many years.</p> <p>Battery electric vehicles may be appropriate in some communities, with current models that travel on highways and can travel for over 100km. In other areas, plug-in-electric-hybrids (PHEV) may be a more practical option. With PHEVs, most travel within the community can be done on electricity and the gasoline engine can provide power to the batteries for extended highway driving. Some models have an option to heat the cabin up before unplugging.</p> <p>There are several specific actions all local governments can take to prepare for low carbon and electric vehicles.</p> <ul style="list-style-type: none"> • Sign on to provincial 'EV-Ready' bylaw if & when it is available. Analysis indicates 80% of charging will be done at home. • Include EV charging infrastructure in sustainability guidelines • Ensure permitting processes (for renovations particularly) are set up to smoothly address electric vehicle charging infrastructure • Consider low carbon vehicles (see action 4.3) and electric vehicles for the local government fleet to demonstrate the viability of the technology • Set up charging stations at highly visible locations, preferably where there are many amenities (e.g. downtown) <p>For higher growth communities, a requirement for alternative fuelling could be established for new gas stations. Surrey City Council passed an innovative new fuel initiative. All new service stations in Surrey will be required to provide at least one alternative fuel source, such as hydrogen, compressed natural gas, or electric vehicle recharging, in addition to conventional gasoline, diesel and propane energy.</p> <hr/> <p>% Emissions Savings Calculation: N/A – unqualifiable at this time, however given national and international projections, with supportive measures as outlined above, electric vehicles (split between PHEV and battery electric vehicles) could comprise up to 2% of passenger vehicles on the road by 2020.</p>
<p>6.11 Electric vehicle & e-bike awareness event</p>	<p>Key Question: Are there electric vehicles in or near the local community, e.g. being sold by local businesses?</p> <p>Description: Public curiosity on electric vehicles can be very high. A recent event in Kelowna run by a volunteer organization attracted approximately 100 people. Many people are unfamiliar with electric vehicles, electric scooters, and electric bikes, and could benefit from learning more about them and how they could be applied to their life. Electric vehicles have much cheaper running costs than conventional gasoline vehicles, and can help people save money.</p> <hr/> <p>% Emissions Savings Calculation: N/A – unqualifiable at this time</p>

Action	Description
<p>6.12 Natural Gas Vehicle Collaboration</p>	<p>Key Question: Are there heavy-duty fleets that could refuel where local government fleets refuel?</p> <p>Description: Gasoline and diesel have approximately 140% of the emissions per unit of energy as natural gas. Natural gas refuelling stations need a critical mass of return-to-base heavy duty vehicles (often ten or more) to be viable. The local government may have some fleet vehicles that could be converted to natural gas from diesel to meet its carbon-neutral operations commitments. Collaborating with other local return-to-base fleets (such as BC Transit, school board, waste haulers, and commercial operators) could provide the critical mass to make a refuelling station viable. This can lower the emissions from all of the participating entities. Example: BC Transit buses in Kamloops and Nanaimo, and School District 23 (Central Okanagan) school buses.</p> <p>Further calculations available in "Option 1A: Project Profile Low Emissions Vehicles" at the 'how' tab of www.toolkit.bc.ca/carbon-neutral-government.</p> <hr/> <p>% Energy Savings Calculation = (a/b)*c, where:</p> <ul style="list-style-type: none"> a. Number of heavy duty vehicle-kilometers traveled from vehicles converting to natural gas b. Total number of heavy duty vehicle-kilometers traveled c. % difference in emissions from original configuration to natural gas configuration (efficiency and carbon intensity) <p>Example: (a/b)*c = (10,000/100,000) * 30% = 3% of emissions from existing heavy duty commercial vehicles</p>

7. Waste

Action	Description
<p>7.1 Organics diversion</p>	<p>Key Question: Is a significant amount of organics going to landfill that could be economically diverted?</p> <p>Description: GHG emissions from landfills are primarily from the decomposition of buried organics. Create a comprehensive composting program:</p> <ul style="list-style-type: none"> • Encourage grass swapping and back-yard composting. • Create a public compost pick-up site and program. • Support existing and new capacity for reusable resources, including Free Swaps, Share Sheds, free-store for unwanted goods, and building materials depot. <p>Organics make up approximately 43 percent of solid waste in Metro Vancouver according to the Recycling Council of BC, which also states that on average, each British Columbian generates over 600 kilograms of waste annually. By diverting organics, each of us has the opportunity to remove approximately 200 kilograms from the solid waste stream every year. Much of this “waste” can be turned into valuable compost that can be used on gardens and landscaping. Example: City of Kelowna landfill producing GlenGrow and OgoGrow.</p> <p>Further calculations available in “Option 1D: Project Profile Household Organic Waste Composting” at the ‘how’ tab of www.toolkit.bc.ca/carbon-neutral-government</p> <hr/> <p>% Energy Savings Calculation for municipal solid waste sector: = (a – c)*b</p> <p>a. % of landfill GHG’s from organics b. % of organics diverted annually c. Average % of emissions over planning period (to 2050?) from organics currently in landfill under BAU scenario</p> <p>Example: (a –c)*b = (80% - 25%) * 10% = 35% waste emissions</p>
<p>7.2 Encourage water conservation</p>	<p>Key Question: Could the community benefit if water consumption was reduced?</p> <p>Description: Many BC communities could benefit if water consumption was reduced. Reduced water consumption could reduce City operations costs (including energy costs) for treatment and pumping. Growing communities can defer the need for new capital investment. And communities in water challenged areas can greatly benefit through ensuring water supplies are more secure.</p> <p>Communities can encourage water conservation through many means, including restrictions on garden watering in summer, public education, water metering, and providing rebates. Regarding rebates, communities can partner with utilities in order to reduce the purchase cost of energy and water efficient appliances in their communities.</p> <p>Example: over a few years, the City of Fort St John ran a highly successful toilet rebate program, managing to exchange over 3,500 old toilets, saving 87 million litres of water over 2009. The City said this deferred the need for reservoir expansions, and saved millions of dollars.</p>

Action	Description
	<p>% Emissions Savings Calculation = (a*b) (electricity only)</p> <p>a. % of community commercial electricity consumption associated with water and wastewater treatment and pumping (8% for Cache Creek, 6% for Lumby)</p> <p>b. % of reduction in electricity consumption</p> <p>Example: (a*b) = (7%*10%) = 0.7%, for commercial electricity</p>
<p>7.3 Support local food production, e.g. farmers markets, community gardens, community greenhouse</p>	<p>Key Question: Is there local interest in growing your own food, and is it feasible locally?</p> <p>Description: Many communities support local food production through farmers’ markets and community gardens. Some go further and have edible landscaping, or support community greenhouses. This reduces trips required to go to the grocery store, and “food miles” i.e. the number of miles food must travel to get from the producer to the plate. There can also be economic benefits by keeping food dollars local and not exporting them.</p> <p>Examples: community greenhouse in Invermere, food forest at a Regional District of Central Okanagan park.</p> <hr/> <p>% Emissions Savings Calculation: N/A – unqualifiable at this time. Will vary between communities.</p>

8. Enabling Actions

Action	Description
8.1 Review land use & transportation plans / policies for SCEEP incorporation	<p>Key Question: Recommended for all communities.</p> <p>Description: It can be necessary or helpful to review land use & transportation plans / policies to ensure that the SCEEP is incorporated. This can help to ensure that the SCEEP is embedded into the local government’s processes, and will not be forgotten.</p>
	<p>Calculation: This enabling action does not have direct impacts itself, however it may help achieve results from other actions.</p>
8.2 Organizational structure for climate action	<p>Key Questions: Are there questions about who is accountable within council / board as well as within staff for climate action? Can there be benefits from establishing a committee, or incorporating into an existing committee?</p> <p>Description: Climate action crosses all departments and levels within a local government. Establishing decision-making, communication, accountability, and resourcing structures that are appropriate for the size and culture of the local government has repeatedly been proven to be critical to implementing actions in a cost-effective manner and achieving results. Taking time up-front to establish such structures is a worthwhile investment in setting implementation up for success. Key questions to answer include:</p> <ul style="list-style-type: none"> • Who makes which decisions regarding climate action? • Who is expected to do what and how are they held accountable? • What new / different communication / planning is required (sewer or road work and district energy)? • What organizational structure changes are required to operationalize this? (Council climate committee? cross-departmental working group? updated job descriptions / resource allocation to include climate action? new positions? ...) • How will capital, operating and human resource elements of the SCEEP be funded?
	<p>Calculation: This enabling action does not have direct impacts itself, however it may be critical to achieving results from other actions.</p>
8.3 Establish a regional energy cooperative	<p>Key Question: Is there strong interest in clean energy in the community?</p> <p>Description: Energy cooperatives are companies owned by their members, rather than by shareholders, with each member having an equal vote. Community energy cooperatives have provided an important vehicle for development of local renewable energy in Denmark, the Netherlands and Germany. In Germany, 200,000 people own shares in local wind turbines. City of Dawson Creek played an important role in establishment of the Peace Energy Cooperative, providing advice and other forms of non-financial support.</p>
	<p>Calculation: Impacts from this enabling action will be dependent on actions and investments of the co-op. This can provide funding and a sense of community and buy-in to climate actions.</p>

Action	Description								
<p>8.4 Identify green economy opportunities</p>	<p>Key Question: This enabling action is recommended to all local governments who want to achieve economic development / diversification benefits from climate action.</p> <p>Description: British Columbians pay on average \$4200 per person annually for energy in their communities (i.e. electricity, natural gas and transportation fuels), not including energy consumed by industry, airlines, ferries, etc. For most communities, 70-80% of money spent on energy leaves town, going to utilities, oil companies, and provincial and federal taxes. Local clean energy development and energy efficiency can be drivers of economic diversification in rural BC, presenting opportunities for communities to transition to a green economy, thereby generating long-term economic and community development benefits. A “green economy” is characterized by low carbon (with renewable energies replacing fossil fuels), low resource depletion and low environmental degradation.</p> <p>A guide to achieving economic development potential of climate action is <i>Clean Energy for a Green Economy</i> available at http://communityenergy.bc.ca/?dln_download_category=economics</p> <hr/> <p>Calculation: This enabling action will assist in moving other actions forward.</p>								
<p>8.5 Leverage local government assets to create expertise and community-wide change</p>	<p>Key Question: Are actions being taken in local government (LG) operations that could be leveraged to support community-wide action?</p> <p>Description:</p> <table border="1" data-bbox="415 1003 1432 1612"> <thead> <tr> <th data-bbox="415 1003 630 1056">LG Action</th> <th data-bbox="636 1003 1432 1056">Community Opportunities</th> </tr> </thead> <tbody> <tr> <td data-bbox="415 1064 630 1360"> <p>Buildings</p> <ul style="list-style-type: none"> - District energy systems - Building energy efficiency retrofits - New green buildings </td> <td data-bbox="636 1064 1432 1360"> <p>Awareness: Increasing public awareness of clean energy and conservation, leading to a greater willingness to explore clean energy and conservation, particularly if corporate actions are deployed in a way to maximize public visibility.</p> <p>Association: Visible actions that others are implementing clean energy and conservation.</p> <p>Action: Local governments across BC are exploring district energy systems with their own buildings as the first buildings that provide critical mass for the system. Many local governments are also connecting public sector organizations in BC which all have carbon neutral commitments. These systems then extend to the surrounding community.</p> </td> </tr> <tr> <td data-bbox="415 1369 630 1474"> <p>Fleet</p> <ul style="list-style-type: none"> - Biofuels - Hybrids / EV's </td> <td data-bbox="636 1369 1432 1474"> <p>Agency: Improved access to fuels and mechanics who can service biofuel, hybrid, or electric vehicles.</p> </td> </tr> <tr> <td data-bbox="415 1482 630 1600"> <p>Other</p> <ul style="list-style-type: none"> - Carbon neutral actions </td> <td data-bbox="636 1482 1432 1600"> <p>Awareness and Association: Provides local government leaders (staff and elected officials) an opportunity to gain knowledge of clean energy and conservation so they can more confidently demonstrate community leadership by implementing them where appropriate in their own business or residence.</p> </td> </tr> </tbody> </table> <hr/> <p>Calculation: Impacts of these enabling actions are highly dependent on specific actions planned for local government operations.</p>	LG Action	Community Opportunities	<p>Buildings</p> <ul style="list-style-type: none"> - District energy systems - Building energy efficiency retrofits - New green buildings 	<p>Awareness: Increasing public awareness of clean energy and conservation, leading to a greater willingness to explore clean energy and conservation, particularly if corporate actions are deployed in a way to maximize public visibility.</p> <p>Association: Visible actions that others are implementing clean energy and conservation.</p> <p>Action: Local governments across BC are exploring district energy systems with their own buildings as the first buildings that provide critical mass for the system. Many local governments are also connecting public sector organizations in BC which all have carbon neutral commitments. These systems then extend to the surrounding community.</p>	<p>Fleet</p> <ul style="list-style-type: none"> - Biofuels - Hybrids / EV's 	<p>Agency: Improved access to fuels and mechanics who can service biofuel, hybrid, or electric vehicles.</p>	<p>Other</p> <ul style="list-style-type: none"> - Carbon neutral actions 	<p>Awareness and Association: Provides local government leaders (staff and elected officials) an opportunity to gain knowledge of clean energy and conservation so they can more confidently demonstrate community leadership by implementing them where appropriate in their own business or residence.</p>
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Action	Description
<p>8.6 Long-term, deep community engagement (culture change)</p>	<p>Key Question: Do the other actions identified fall short of the desired change?</p> <p>Description: Overall, the purpose of social mobilization for British Columbia climate action is to:</p> <ol style="list-style-type: none"> 1. Engage residents in developing and implementing climate solutions through collective, 'bottom-up', informal, organizational and institutional initiatives. 2. Change collective behaviour to reduce carbon footprints. 3. Build public support for (and contributions to) low-carbon climate policies and actions focused on the green economy, ecological resilience and sustainable communities, in order to achieve GHG targets, short- and long-term, as well as other provincial climate change goals. 4. Build capacity and resilience to plan and respond to climate change adaptation and mitigation. <p>Active mechanisms can be established to pilot, replicate and monitor successful social engagement techniques, such as the Columbia Basin Community Adaptation program, and the UK Rural Community Councils community-led planning, which writes:</p> <p style="padding-left: 40px;"><i>People need ... information, a realistic assessment of the threat or diagnosis, a sense of personal control over their circumstances, a clear goal, an understanding of the strategies to reach that goal, a sense of support, and frequent feedback that allows them to see that they are moving in the right direction.</i></p> <p>A recent study found that reasonably achievable emissions reductions are approximately 20% in the US household sector in 10 years, if "most effective non-regulatory interventions are used," such as incentives and social marketing (Dietz, T., Gardner, G. T., Gilligan, J., Stern, P. C., Vandenberg, M. P.: Household actions can provide a behavioural wedge to rapidly reduce U.S. carbon emissions, in <i>Proceedings of the National Academy of Sciences</i>, 106: 44, 18452-18456, 2009).</p> <hr/> <p>Calculation: Impacts can be substantial but are highly dependent on the specific program implemented.</p>

Appendix 3 – RDCK SCEEP Workshop Notes

This summarizes the notes from the workshop flipcharts. The morning was devoted to sub-regional SCEEPS. Afternoon workshop participants divided into regional groupings to “drill down” and three topic areas: 1. Education/Engagement. 2. Renewable Energy/District Energy Feasibility, and 3. Transportation (“Movement” including active, multi-modal and electric vehicles.)

<p>Observations/Notes from Workshop participants:</p> <ul style="list-style-type: none"> • Uncertainty – agricultural opportunities • FUNDING – hydro generation in water systems hydro for Area I • Hotter/drier summers – extreme weather events • Wildfire /water flooding – climate change • Earlier spring • Cedar decrease • Young moving in • Affordability of renovations • Increase interest in EnerGuide ratings • More intense storms – power knocked out more often • Decrease in energy use is good for business • More momentum around energy. Note the BC CARIP reports show 10000 actions • Shift in seasons in energy production – local hydro and solar • Winter’s warmer • Wildlife shifts • Early melt more dramatic • Agriculture – planning ahead • Cultural shift – energy – climate – wood propane electric • Decrease energy costs • Transit improvements • Winter snow pack • Younger generation • Heat pumps – technology •
<p style="text-align: center;">Creston and Areas ABC Action Plan Summary</p> <p>Ongoing Actions: food, water, event planning, woodstove, green economy, behavior change</p> <p>Year 1 – public education, incentives, checklist</p> <p>Year 2 – OCP review Creston /DPA</p> <p>Years 3 & 4</p> <ul style="list-style-type: none"> • collaborative regional approach: District Energy / renewable heat • Active transportation • Research: recycling, heat capture at hospital, wood waste • Energy cooperative • Changes to building bylaw • Organics – Creston waste plan.

<p style="text-align: center;">Castlegar / Slocan Valley / Nakusp and Areas HIJK Action Plan Summary</p> <p>Education:</p> <ul style="list-style-type: none"> • Leverage utilities /programs • Consistent messaging (buildings) • Universal / inexpensive <p>Funding:</p> <ul style="list-style-type: none"> • transportation – supporting safe alternatives between communities <p>Water – availability Food – security / availability Energy – decentralizing</p>
<p style="text-align: center;">Kaslo Nelson Salmo and Areas DEFG Action Plan Summary</p> <p>Key Themes</p> <ul style="list-style-type: none"> • Shared resources – do plan: coordinator – Not tax based partner • Education: trades, building inspectors, realtors – energy retrofits for low income; WK regional approach for marketing and draw on Nelson Hydro success • Renewable energy – assessments/feasibility • Improvements in Transportation • Green Economy – help business development – link to Coop/renewables/solar
<p style="text-align: center;">Overall RDCK Actions</p> <p>Region wide CEM Coordination Move plan</p> <ul style="list-style-type: none"> • Prioritize projects for grants • Access funds • Boots on ground <p>Partners:</p> <ul style="list-style-type: none"> • Federation of Canadian Municipalities (FCM) for feasibility studies • Nelson Hydro • Columbia Basin Trust • FortisBC • BC Hydro • Rural Development Institute for data
<p>Afternoon Priority Discussion groups: Summary</p> <ol style="list-style-type: none"> 1. Education and Engagement <ul style="list-style-type: none"> • Shared resource funded by utilities, RDCK, CBT, Columbia Power • Leverage existing events • Leverage Nelson Hydro activities

- Communication ideas: library series, conversation cafes/opinion poll, senior groups
 - Communication: same message to all – website, mail out, media release, listserv from director, grant to society for newsletter; hire communication person
 - Partners – Selkirk college education program; youth/school district for energy conservation program/ industry partnership
2. Renewable Energy/District Energy
- Financial
 - Energy scan- what works
 - GHGs
 - Ready for funds
 - Leverage assets
3. Transportation – “Movement” (Active /multi-modal & Electric Vehicles)
- Inventory on how we move in Central Kootenay: trails, accessibility, seniors
 - Priorities for network
 - Identify areas
 - Partners: CBT/RDI

Flip Chart notes: 1. Education/Engagement

Nelson Hydro program: EcoSave program

- Reduced cost/contract list/rebate access
- Online finance at 3.5% interest 3-5 year term
- Pilot project

Community solar garden – generation credit

- 50kW 240 panels
- \$923 /panel
- 7.5 year pay back
- e.g. Kimberley BC Hydro Standing Offer program 61,000 kWh/yr \$6000
- model: Fortis change to allow for growth
- utilities adjust

Regional Wide Programs / Communications Person

- CBT/FBC/BCH/RDCK funding
- Columbia Power operator
- Fund initiative – Nelson Hydro oversee
- Expand program/benefit all
- Infrared mapping
- EnerGuide rating to change April 1, 2016

Annual Green Building show – Trades

Add EV and electric bikes to home show in Castlegar

Have a “Green Room”

Brilliant for solar garden at Mount Sentinel

- Tie to grid FBC - Return to tax bill? Explore

- Columbia Power/CBT
- Area I community works fund \$250,000: consider using to build water micro hydro

Communications

- Library series i.e. FBC low income
- Conversation café /opinion poll
- Seniors groups
- During community initiative
- Website/mail out / community education
- Media release / collaborative areas
- Listserv from director
- **Same message to all – need for communications person**
- Grant to society for newsletter

Selkirk College – partnership/education program

School District – youth – grade 4-5 program

- kW consumption monitor at library
- use classroom worksheet / classroom noted that the overhead projector cost \$30/year

Utility collaboration

- BC Hydro/FortisBC – tie in lines
- Consider power outages

Industry – partnership / energy savings

Notes: There is a monitor at library in Nakusp; Nakusp \$35,000 50kW generation sell to BC Hydro

Flip Chart notes: 2 Renewable Energy / District Energy Feasibility

- Energy scan- determine what works
- Review GHGs
- Make project ready for funds
- Leverage assets

Flip Chart notes: 3. Transportation – “Movement”

(Active /multi-modal & Electric Vehicles)

- Create Inventory on how we move in Central Kootenay: trails, accessibility, seniors
- Priorities for network
- Identify areas
- Partners: CBT/RDI

Appendix 4 – RDCK Sub-Region Summary Notes

Prior to the SCEEP workshop, background information was compiled on population and actions already undertaken in the RDCK. Preliminary information and discussion points for each sub-region are noted here. Many actions have been undertaken in the RDCK and these sub-regional summaries are not considered complete.

	AVG Annual Growth,	2006	2011	Annual OCP GHG reduction Target below 2007 rates by 2020
	2006-2011			
Central Kootenay Regional District	0.90%	55,883	58,441	-1.59%
Central Kootenay Regional District Unincorporated Areas	0.29%	29,926	30,360	-1.24%
Central Kootenay A	-0.11%	2041	2030	-1.24%
Central Kootenay B	-0.49%	4575	4464	-1.24%
Central Kootenay C	1.33%	1284	1372	-1.24%
Total/Average ABC	-0.09%	7900	7866	-1.24%
Central Kootenay H	-0.14%	4319	4289	-1.24%
Central Kootenay I	1.25%	2415	2570	-1.24%
Central Kootenay J	1.42%	2792	2996	-1.24%
Central Kootenay K	-0.46%	1800	1759	-1.24%
Total/Average HIJK	0.50%	11326	11614	-1.24%
Central Kootenay D	-1.51%	1525	1413	-1.24%
Central Kootenay E	0.35%	3716	3781	-1.24%
Central Kootenay F	1.29%	3730	3976	-1.24%
Central Kootenay G	-0.10%	1605	1597	-1.24%
Total/Average DEFG	0.36%	10576	10767	-1.24%
Creston Town	1.91%	4,826	5,306	-1.00%
Castlegar City	1.49%	7,259	7,816	-3.00%
Nakusp Village	0.58%	1,524	1,569	-1.30%
New Denver Village	-0.31%	512	504	(-0.5%)
Silverton Village	1.06%	185	195	-0.50%
Slocan Village	-1.17%	314	296	-3.00%
Kaslo Village	-0.87%	1,072	1,026	-0.80%
Nelson City	2.02%	9,258	10,230	-1.80%
Salmo Village	2.49%	1,007	1,139	-1.70%

Population Source : StatsCan.gc.ca census

Areas ABC & Creston

- Electoral Area A Comprehensive Land Use Bylaw
- Electoral Area B Comprehensive Land Use Bylaw
- Electoral Area C Comprehensive Land Use Bylaws

Creston SCEEP ideas:

- Backyard Chickens/Restaurant Composting Program
- Staff on School Bus

CARIP Report - includes:

- Community wide retrofits to community halls
- Creston Wildlife Interpretive Centre project
- Commercial gas capture options – Fortis BC
- Energy Biogas production
- Park improvements
- Rails to Trails
- Recycling/Waste roundup – zero waste campaign
- Landfill gas flaring at Creston Landfill
- Water district improvements/water conservation
- Geohazard database policy



Areas HIJK & Castlegar, Slocan, Silverton, New Denver and Nakusp

- Electoral Area H North OCP
- Electoral Area IJ OCP
- Electoral Area K OCP

Castlegar/Slocan Valley SCEEP ideas

- Pedestrian safety and connections MOTI
- Biomass
- Micro Hydro
- Free Community Bikes

CARIP Report - includes:

- Community wide retrofits to community halls
- Commercial gas capture options – Fortis BC
- Energy Biogas production
- Park improvements
- Master plan for IJH Castlegar and Slocan Valley
- Rails to Trails
- Recycling/Waste roundup – zero waste campaign
- Monitoring wells at Ootischenia landfill
- Curbside rural program Castlegar
- Water district improvements/water conservation
- Geohazard database policy
- Improvements to bus shelters



Areas DEFG & Kaslo Nelson Salmo

- Kootenay Lake Lardeau Valley OCP
- Electoral Area E OCP
- Electoral Area F OCP
- Electoral Area G OCP

Nelson/Kaslo/Salmo SCEEP ideas

- Free Community Bikes
- Reduce Recycling distance
- Solar garden

CARIP Report - includes:

- Community wide retrofits to community halls
- Commercial gas capture options – Fortis BC
- Energy Biogas production
- Park improvements
- Master plan for EFG Nelson Salmo completed
- Rails to Trails/Trails in Kaslo
- Recycling/Waste roundup – zero waste campaign
- Water district improvements/water conservation
- Geohazard database policy
- Improvements to bus shelters

