

# Discussion Paper

## District of Stewart Climate Action Strategy – Addressing Bill 27

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### Purpose

To provide background information on the state of local government climate action efforts in BC to inform a recommended approach to addressing Bill 27 for the District of Stewart.

### Background

#### The Urgency of the Issue

Climate Change is considered by many to be the most serious issue of our time. In 2007, the Intergovernmental Panel on Climate Change (IPCC), representing thousands of the most respected climate scientists world-wide (coordinated through the UN), issued a report with the most decisive evidence yet concluding that global warming is “unequivocal” and that human-generated greenhouse gas (GHG) emissions are responsible for this warming. Globally, GHG emissions have increased by 70 percent since 1970, and today’s atmosphere contains over 32 percent more carbon dioxide than was present in the early 1900s.<sup>1</sup> Consequently, global average temperature has risen by 0.6 degrees Celsius since 1900, and an unprecedented continuous warming of 0.2 degrees Celsius per decade is forecasted.<sup>2</sup>

Despite international scientific consensus that the climate is changing as a result of human activities, the general public still seems to be confused about the issue. A recent study revealed that although 97 percent of climate scientists support the consensus position about climate change, only 58 percent of the general public is convinced.<sup>3</sup> The study concluded that: *“It seems that the debate on the authenticity of global warming and the role played by human activity is largely nonexistent among those who understand the nuances and scientific basis of long-term climate processes. The challenge, rather, appears to be how to effectively communicate this fact to policy makers and to a public that continues to mistakenly perceive debate among scientists.”* To help clarify some of the common myths and misunderstandings about climate change, a brief *Climate Science 101* overview has been included in **Appendix A**.

Rising average temperatures have and will increasingly be implicated with increases in the frequency and intensity of severe weather events, such as wind storms, heat waves and cold spells, flooding, drought, and other extreme weather events. In addition to increasing weather related disasters, climate change will also seriously affect water, forest and agricultural resources and place increasing pressure on local government infrastructure. Locally, Stewart has arguably already felt the impacts of climate change with glaciers receding before peoples’ eyes and record-breaking heat, snowfall, and rainfall events all being recorded in the last decade. With its close proximity to the ocean and water/wastewater infrastructure that is periodically under threat, residents of Stewart have considerable cause for concern about the impacts of climate change.

*There are two responses to Climate Change:*

- 1) Mitigation:** Efforts to reduce (or enhance the sinks of) GHG emissions.
- 2) Adaptation:** Responses to changing climatic conditions and policies to minimize the predicted impacts of climate change.

#### Provincial Climate Change Regulations

##### Bill 44

The Province of BC has taken climate change seriously, implementing sweeping policies and legislation in every sector of the province – from a carbon tax to regulation of vehicle emissions, landfill gas, fuel carbon content and minimum renewable energy standards. In November 2007, the BC *Greenhouse Gas Reduction Targets Act*, or Bill 44, set the most aggressive targets in North America, committing BC to reduce its GHG emissions by 33 percent below 2007 levels by 2020, and 80 percent below 2007 levels by 2050.

<sup>1&2</sup> IPCC Fourth Assessment Report: Climate Change 2007, [http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml#1](http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1)

<sup>3</sup> Doran, Peter T. Examining the Scientific Consensus on Climate Change, EOS, VOLUME 90, NUMBER 3, JANUARY 20, 2009. [http://tigger.uic.edu/~pdoran/012009\\_Doran\\_final.pdf](http://tigger.uic.edu/~pdoran/012009_Doran_final.pdf)

To demonstrate provincial leadership, a central component of Bill 44 is the legal requirement for all public sector organizations (PSOs), including provincial ministries and agencies, boards of education, colleges, universities, health authorities and Crown corporations, to be carbon neutral in their operations by 2010. Carbon neutrality is achieved by first measuring GHG emissions, reducing GHG emissions to the extent possible and offsetting the remainder. Under Bill 44, PSOs are required to measure GHG emissions using the provincial SMARTTool reporting framework and to report annually on the actions taken to reduce GHG emissions. Further, to fulfill the carbon neutral mandate, PSOs will be purchasing carbon offsets to counter their emissions. Affecting over 150 organizations, once the carbon neutral government regulation is implemented, BC will become the first carbon neutral jurisdiction in North America.

Climate Action Charter

At the 2007 conference of the Union of BC Municipalities (UBCM), the Premier introduced the Climate Action Charter, a voluntary agreement under which local governments were invited to sign and make a shared commitment to taking action on climate change, including: becoming carbon neutral in their operations by 2012, measuring and reporting on community GHG emissions, and creating complete, compact and energy efficient urban and rural communities. As an incentive, signatories have been offered a 100 percent rebate on the money they spend on the carbon tax each year, which amounted to \$2.9 million being returned in 2010 to the 178 local governments that had signed on to the charter (of the 190 total in BC). The Provincial-UBCM Green Communities Committee recently released a ‘communiqué’ outlining the carbon neutral framework being rolled out, a summary of which is included in **Appendix B**.

Bill 27

While the GHG reduction commitments of the Charter relate mainly to local government operations, the Province also introduced mandatory legislation to encourage local governments to assess their contribution and control over community-wide GHG emissions. In 2008, the Province passed the *Local Government (Green Communities) Statutes Amendment Act* (or Bill 27) requiring all local governments to establish climate action targets, as well as policies and actions to achieve such targets, in their Official Community Plans (OCP) by May 31, 2010 and Regional Growth Strategies by May 31, 2011. Specifically, the Local Government Act (LGA) has been amended to include the following:

**LGA section 877 (3)** - An official community plan must include targets for the reduction of greenhouse gas emissions in the area covered by the plan, and policies and actions of the local government proposed with respect to achieving those targets (by May 31, 2010).

It is estimated that up to half of Canada’s GHG emissions are under the direct or indirect control or influence of local governments, including waste management, transportation, and community development. However, in small, rural communities that are experiencing limited growth, the estimate of local government control over GHG emission reductions is considerably lower, yet significant nonetheless.

Given their authority over land use and zoning, infrastructure, building regulation, public transportation, and solid and liquid waste, local governments make long-standing decisions that impact the environment, energy consumption and GHG emissions. Ultimately, the intent of the GHG target-setting provisions of Bill 27 is to encourage a fundamental shift in planning across the province – to ensure that local governments apply a climate action planning lens to decision making processes and consider how their OCPs will impact GHG emissions.

	<i>Targets, Policies and Actions (Bill 27)</i>	<i>Climate Action Charter</i>
<b>Purpose</b>	To encourage communities to establish targets and develop policies and actions contributing to GHG reductions	To identify the shared commitment that local governments have to addressing climate change
<b>In Legislation</b>	Yes	No
<b>Voluntary</b>	No	Yes
<b>GHG emission reductions targeted</b>	Reduce <i>community-wide</i> emissions through planning	Reduce emissions from <i>corporate and community-wide</i> operations
<b>Activities</b>	Set targets in OCPs, and define actions	Monitor and report corporate operations emissions. Be carbon neutral in 2012. Develop compact communities.
<b>Dates to meet</b>	OCPs May 31, 2010 RGSS May 31, 2011	2012
<b>Funding attached</b>	No	Signatories receive Carbon Tax rebate (CARIP grants).

Source: Ministry of Community, Sport & Cultural Development

## Why Comply?

The District of Stewart would be exposed to significant legal and financial risk if it chose to not to comply with the requirements of Bill 27. Given that the Bill 27 deadline has now passed, the District’s OCP currently does not comply with the *Local Government Act*, and as such, it cannot be used to legally enforce development regulations. Further, and perhaps most importantly, local government funding sources are increasingly tied to sustainability efforts and commitments. If the District is found to be unsupportive of provincial sustainability goals, its eligibility to secure grant funding will be compromised. The Province has been said to have already started work to implement a 10-point deduction from the point system used to assess grant applications for those who have not complied with Bill 27.

On the other hand, Bill 27 provides a tremendous incentive and opportunity to pursue innovative infrastructure projects, and ultimately to save energy. Infrastructure put in place today will remain for decades. By designing communities to be energy resilient through efficiency and renewable energy projects, long-term energy and economic security can be achieved, while simultaneously reducing emissions, improving air quality, growing the local economy – and saving money. The economic, environmental and social benefits of considering energy use in decision-making can have a wide-spread positive impact throughout the community.



## Introduction

The District of Stewart has engaged a sustainability consultant to advise on and facilitate the implementation of a strategy to address the requirements of Bill 27. A planning exercise is currently being undertaken to develop a high-level Climate Action Strategy which will be used to update the existing OCP (1996) in order to fulfill the legislative requirements. This discussion paper has been developed to bring Council up to speed on the state of local government climate action efforts in BC to inform a recommended approach for the District to address Bill 27.

The Province has provided guidance on the requirements and intention of Bill 27 through workshops, webinars and the document *Inventories, Targets and Actions: Implementing GHG and Energy Reduction Measures for Bill 27* (available on the BC Climate Action Toolkit website [www.toolkit.bc.ca/eog](http://www.toolkit.bc.ca/eog)). Recognizing the unique realities and capacities of the diverse local governments in BC, Bill 27 is meant to inspire communities to consider their contribution to climate change as they make long-lasting decisions regarding the built environment and infrastructure. Thus, the Province is not overly prescriptive on the requirements to fulfill Bill 27, aside from articulating the requirement that OCPs must include at *least one measureable* (quantifiable) GHG emission reduction target, along with policies and actions to achieve the target.

## GHG Reduction Targets

Setting a target is an important step in establishing a goal for the community, making a statement about the community's commitment to addressing climate change and other community objectives. Most communities set a single overall GHG reduction target, but it is important to keep in mind the goal of reducing energy consumption, as electricity in BC is mostly generated from hydro with minimal GHG emissions.

Generally, two approaches have been used when setting a target – a visionary approach (top-down) and a pragmatic approach (bottom-up). A visionary approach is based on the general acceptance of the need to achieve a goal – based on community objectives rather than a feasibility analysis. For example, climate scientists report that dramatic GHG reductions are required to avoid catastrophic climate change impacts, and the Province has set the visionary target of 33 percent by 2020 and 80 percent by 2050. In contrast, a pragmatic approach is more specific and quantifiable, involving a detailed analysis and assessment of reductions that can likely be achieved. For example, a number of BC local governments have used elaborate modeling tools to forecast the GHG reductions associated with selected policies and actions, and then established their GHG reduction targets based on the total reductions they felt they could achieve. Given the importance of achieving significant energy and GHG reductions, a visionary approach is recommended by the provincial government, particularly in setting an overall target.

## What have other communities done?

Over the last decade, tremendous momentum has been building with regard to local government climate action efforts in BC. Long before the Province provided financial and legislative incentives to act, local governments in BC have been demonstrating leading-edge leadership in planning and developing sustainable, low carbon communities. For example, approximately one-third of BC communities are members of the Federation of Canadian Municipalities Partners for Climate Protection (PCP) program, the largest proportion of provincial membership in Canada. Established in 1998, the PCP program's five milestone framework has guided local governments' climate action planning efforts (commit, measure, plan, implement, and monitor). Supported by a range of federal and provincial funding mechanisms, a large number of BC communities have conducted Community Energy Plans (CEP) that set out climate action targets, policies and actions.

As expected, Bill 27 has sparked a whirlwind of activity on the climate action planning front in BC. Communities have responded in diverse ways to address Bill 27, but some general trends have emerged. Many communities have used Bill 27 as an opportunity to conduct a comprehensive update of their OCP, and in the face of environmental and economic imperatives, most have re-oriented their OCPs into Integrated Community *Sustainability Plans*. Some communities, that had previously developed a Community Energy Plan, simply restated the targets and referenced the policies and actions outlined in their CEP, while other communities have endorsed the provincial targets at a high-level and have committed to conducting a CEP to inform their climate policies and actions. In an effort to share information on local government climate action efforts, the Province developed the Climate Action Toolkit website which has concise, targeted information for elected officials at: [www.toolkit.bc.ca/eoq](http://www.toolkit.bc.ca/eoq), including a webinar series, Bill 27 workshop materials and local government climate action example guides and resources (sample brochure included in **Appendix H**).

The climate action efforts of Northwestern BC communities were assessed to get a sense for how this region has responded to Bill 27 and a table was developed for comparison purposes (**Appendix C**). Given the diversity of approaches taken and lack of information available on some of the smaller communities, it is difficult to generalize the results of Northwestern BC community efforts. However, discussions with provincial representatives conclude the majority of communities in the North West have adopted or endorsed the provincial targets, many of which referenced the shared federal-provincial-municipal jurisdictional responsibility for achieving the emissions reductions.

## Community Consultation

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There is much debate amongst planners about when the community should be consulted during planning exercises. Some believe that it is the first thing a community should do when considering any planning project, while keeping the community engaged throughout the process. Others feel that the planning team should have a solid framework or draft plan, informed by community advisory representatives, to present to the community in order to receive effective feedback.

For the purposes of this planning exercise, the community consultation process essentially came first in order to take advantage of some synergies with the Age-friendly Assessment and Community Planning project. A survey was developed to assess the community's perspectives on climate change and to seek feedback on energy use to inform possible reduction strategies. A consultation session was also hosted to provide some education on the subject, while soliciting residents' opinions and ideas about climate change and energy reduction efforts.

### Community Survey

A community survey was conducted on behalf of the District of Stewart to gauge the community's commitment to taking action on climate change and to seek community feedback on energy use and possible energy/GHG reduction strategies. The surveys were mailed directly to each resident and draw prizes (10 pedometers, 5 reusable lunch/shopping bag sets) were offered as an incentive to return the completed surveys to the District office. A total of 30 surveys were completed and returned (accounting for 6.7% of the population of approximately 450 people). Please refer to **Appendix D** for a concise summary of the survey responses.

### Consultation Session: *Community Conversation on...Taking Action on Climate Change*

A community consultation session was hosted on behalf of the District of Stewart at the Stewart Health Centre on Wednesday evening, March 16, to hear residents' thoughts and ideas about climate change and energy reduction efforts. The event was relatively well attended with 11 people participating (2 municipal elected officials), many of whom stayed late conversing until almost 10pm.

The session opened with an informative presentation that highlighted some reasons why communities are taking action on climate change and what other communities are doing in Northern BC. The presentation was followed by an engaging discussion around how Stewart as a community might go about reducing its carbon footprint. Participants were so motivated by the themes presented that the facilitator had a difficult time finishing the presentation as the ideas and comments flooded from participants. A summary of the feedback provided has been included in **Appendix E**.

### Consultation Analysis

In general, the consultation process was well received by the community with relatively good participation and excellent quality feedback provided. Given that 73 percent of respondents to the survey indicated that they were concerned about the impacts of climate change, one can conclude that there is wide-spread support for the District to take action to mitigate the impacts of climate change. With climate change perspectives aside, there is definitely a consensus on the interest in reducing energy consumption (90 percent indicated their interest in doing so), and any effort by the District to help reduce energy use would likely be well-received.

The consultation process revealed high quality sustainability ideas and passionate responses from residents indicating that there is both an appetite for and community capacity to reduce energy consumption and take action on climate change. In order to develop and implement an effective climate action strategy, there is a need to engage the community further, especially to tap into the wealth of knowledge and resources within the community. The majority of local government sustainability initiatives are championed through some form of an advisory group. The District would benefit immensely from supporting the development of an environmental/sustainability/climate action advisory capacity, whether it is a new committee or a sub-group created within an existing advisory capacity.

## Moving Forward...Options to Address Bill 27

At the simplest level, a typical planning process can be framed around the following three questions:

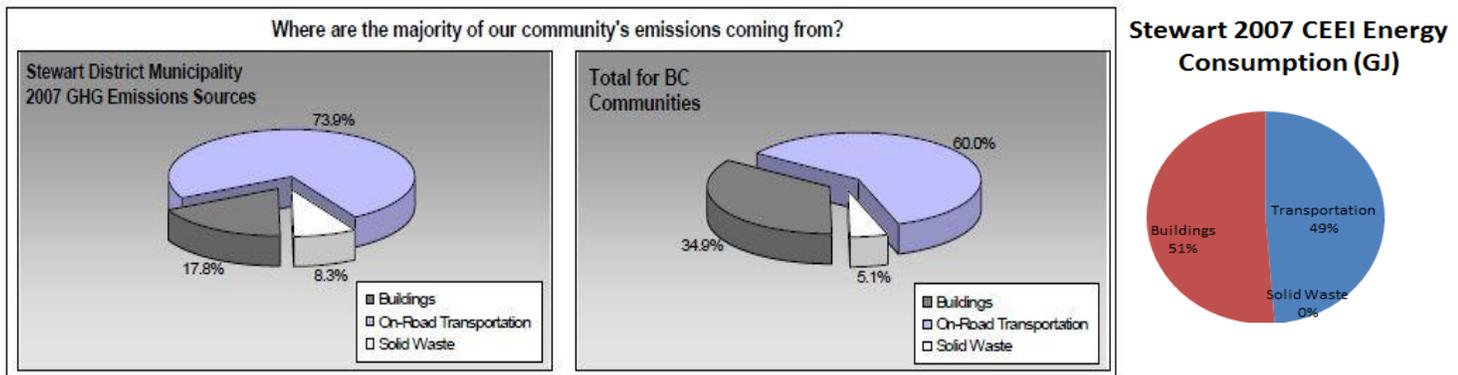
1. Where are we now? (inventory)
2. Where do we want to be? (targets)
3. How do we get there? (action planning)

### Community Energy and Emissions Inventory

In 2010, the Province released a 2007 Community Energy and Emissions Inventory (CEEI) report for each local government in BC. The CEEI reports are the result of a multi-agency effort to assist local governments in tracking and reporting on community-wide energy consumption and GHG emissions every two years. The inventory is the first of its kind in North America, and helps local governments meet the Climate Action Charter commitment to measure and report on community GHG emissions.

Although the data related to building energy consumption and solid waste emissions is quite accurate, transportation emissions have been a bit more difficult for the province to nail down. The data input for transportation emissions is a combination of vehicle license registrations and modeling based on rigorous estimates of average kilometers travelled by vehicle make and type. Although this input data is arguably not the best indicator of transportation emissions (as it does not capture actual vehicle use), it has been checked against fuel sales data and has been found to be accurate to  $\pm 10$  percent.

Ultimately, the CEEI report offers a general sense for where energy is used and emissions generated within the community. One can conclude with certainty that the most significant activity contributing to GHG emissions in Stewart is associated with driving vehicles (73.9 percent), as illustrated in the chart below (taken from the Stewart CEEI report highlighted in **Appendix F**). Energy used in buildings is also a key contributor, and although the proportional contribution of building related GHG emissions is relatively low (17.8 percent), its contribution to total energy use is quite high (51 percent).



Source: 2007 Stewart CEEI Report, BC Ministry of Environment, 2010

Given that the inventory methodology is not an exact science and is constantly evolving and being updated, caution should be used when using the CEEI results as a baseline for target setting. In order to establish a more concise baseline for the District to set achievable and measurable GHG reduction targets, further analysis needs to be conducted to more accurately reflect actual transportation emissions. Therefore, the CEEI data is not appropriate for the establishment of pragmatic, bottom-up targets, and a visionary approach will need to be taken at this point in time. In the meantime, in addition to providing a general understanding of where community emissions are coming from, the CEEI inventory may be of interest in comparing with other communities' emission profiles and the table below offers a point of reference in this regard.

<b>2007 NW BC Community GHG Emission Comparison (CEEI)</b>		
<b>Community</b>	<b>Total GHG Emissions (tonnes CO<sub>2</sub><sup>e</sup>)</b>	<b>Per Capita (tonnes CO<sub>2</sub><sup>e</sup>/per capita)</b>
Stewart	4,605	10.4
Granisle	2,413	6.1
New Hazelton	4,100	6.8
Houston	38,573	13.0
Smithers	62,193	11.7
Terrace	90,472	7.7
Prince Rupert	85,413	6.6
Vancouver	2,593,968	4.1

### Possible GHG Reduction Targets

In order to move forward with addressing the obligations of Bill 27 in a timely and cost effective manner, two options regarding GHG reduction targets are suggested for the District’s consideration, as follows:

#### 1. Adopt Provincial Targets

Many local governments in BC have adopted or endorsed the provincial targets of reducing GHG emissions by 33 percent below 2007 levels by 2020, and 80 percent by 2050. A great deal can be done at the local level to affect GHG reductions in the three main sectors captured in community emission portfolios – transportation, buildings and solid waste. However, it can be argued that local government control over the GHG emission intensity of vehicles and buildings is somewhat limited in that other levels of government largely set these standards. This is particularly relevant in small, rural communities experiencing limited or no growth, as a great deal of local government leverage in affecting GHG emission reductions relates to influencing the shape and form of development. In addition, local government capacity to implement GHG reduction projects is largely dependent on federal and provincial funding.

Thus, it has been a trend for local governments to endorse the provincial targets while referencing the shared responsibility for achieving such targets. Further, aligning with the provincial targets may have the added benefit of increasing eligibility for provincial funding and support.

#### 2. Conduct a Community Energy Plan and/or Integrated Community Sustainability Plan/OCP Update

The provincial GHG reduction targets are ambitious, and the District of Stewart may wish to act with more prudence when setting large-scale community goals. A large number of local governments in BC have undertaken Community Energy Plans to assess their energy consumption matrix and mapped out a comprehensive strategy to achieve the reduction targets they set. They have then used this informed energy strategy to update their OCP to address Bill 27 (e.g. Houston, Burns Lake).

Given that energy consumption is involved with almost every community function, local governments have also been moving toward a model of integrating energy planning with community planning as a whole – shifting the traditional compartmentalized planning processes (i.e. separate OCP update, energy, transportation, parks, and housing plans) toward an over-arching Integrated Community Sustainability Planning (ICSP) process.

In response to Bill 27, a large number of communities have undertaken an ICSP process (with the OCP update a central goal) and have addressed the need to set GHG reduction targets, policies and actions during this comprehensive planning exercise (e.g. Telkwa, Terrace, Prince Rupert). There are a great deal of funding opportunities available to support such planning efforts, and given that the District of Stewart may need to update its OCP, it may benefit from addressing Bill 27 in an integrated fashion by undertaking an ICSP project.

Recommended Option:

A phased approach could be adopted to achieve both options set out above, whereby the District could endorse the provincial targets with a minor OCP amendment, and then commit to conducting an energy plan or ICSP project to map out the policies and actions to achieve the targets. Many other communities have adopted this approach to allow for a sufficient time-frame to develop a detailed, effective climate action strategy while meeting current provincial legislation (e.g. Smithers, Granisle).

**Suggested Climate Policies and Actions**

Within the limited scope of this project, a range of high-level GHG reduction policies and actions have been identified for the District’s consideration, as follows:

Policies:

- ▶ **Support and facilitate energy efficient development and land use patterns to create complete, compact community development**
- ▶ **Promote energy efficiency, reduced energy costs, and the reduction of the carbon intensity of energy**
- ▶ **Work cooperatively with senior levels of government to reduce GHG emissions and energy consumption**

Actions:

- ▶ **Develop a strategy to measure and reduce corporate energy consumption.**  
Taking action to reduce emissions in local government operations is an opportunity to improve efficiency, reduce energy costs, and strengthen overall performance and service delivery. Although corporate operational emissions are a small component of a community’s total emissions, local government leadership plays a pivotal role in building knowledge and momentum that leads to community-wide emission reduction opportunities. A basic assessment of the District’s corporate emissions and strategies to reduce those emissions has been included within the scope of this project and will take place over the next few weeks.
- ▶ **Compact, energy efficient development and land use patterns are supported through the implementation of the following existing OCP policies:**
  - a. **5.1.3**  
Encourage a future urban development form which follows the principle of infilling and maintains a compact urban form consistent with the provision of existing infrastructure and public services.
  - b. **5.1.6**  
Emphasize to the senior levels of government, the District of Stewart’s regional role as a major community with infrastructure to service an expanded population and to discourage the indiscriminate location of settlement in the rural hinterland.
  - c. **5.2.8**
    - a) All retail, personal service and commercial development shall be concentrated in the present downtown core.
    - b) Higher density residential development as part of the commercial enterprise shall be allowed in the downtown core as part of a comprehensive development (encouraging mixed-use development).
- ▶ **During subsequent OCP updates, integrate energy management considerations into future policies and apply a climate action planning lens to community development considerations.**

▶ **Support community transportation options.**

Transportation issues dominated the comments and discussion during recent community consultation processes. Residents almost unanimously agree that transportation options in Stewart are lacking, or non-existent. Of particular concern is the lack of public transportation options between Stewart and neighbouring service centres, and 75 percent of survey respondents indicated that they would be willing to pay for a bus service to Terrace. A first step in supporting community transportation options could be as simple as developing a Ride-Share board in a high-traffic area in town (Post Office).

Given the population size and distance between destinations, a traditional transit service is not economically or environmentally feasible for Stewart. However, an intermittent (weekly or bi-weekly) community shuttle service could strike a good balance between cost and user needs, and the District should to continue to explore financial and logistical opportunities to charter a shuttle bus, possibly in partnership with Northern Health. Ultimately, addressing the transportation needs of the community would have a number of positive co-benefits related to affordability, accessibility and sustainability.

▶ **Support local active transportation options.**

The community survey revealed that a number of residents choose active transportation options to get around in Stewart, such as walking and biking. An effort should be made to continue to support mobility within the community through trail and walkway maintenance and enhancements. Further, a number of residents expressed a desire to have bike racks available in the downtown area.

▶ **Develop an idling reduction strategy.**

Strong community interest and support for reducing excessive vehicle engine idling is apparent from the community consultation process. Reducing unnecessary idling is often a first step for local governments looking to improve air quality and reduce transportation GHG emissions. In addition, vehicle idling reduction programs could save the municipality up to 20 percent on fleet fuel costs. Anti-idling initiatives can take the form of a local bylaw and/or public awareness, such as signs and information brochures. There are extensive federal and provincial resources available to support local government idling reduction initiatives, such as signs, information materials, and stickers, available at: [www.idlefreebc.ca](http://www.idlefreebc.ca) and <http://oee.nrcan.gc.ca/communities-government/idling.cfm?attr=16>.

▶ **Address landfill concerns, investigating opportunities for resource recovery, and support recycling and reuse.**

The District of Stewart is at a cross-road with respect to the management of its municipal solid waste with significant capacity and operational concerns. A grant application has been submitted under the Provincial Infrastructure Planning Grant program to hire a qualified professional to assess the environmental impact of the Stewart landfill and propose an action plan for moving forward. During this assessment, the District should incorporate an investigation of resource recovery options (i.e. waste-to-energy facility), as well as opportunities to support recycling and reuse efforts.

▶ **Address water infrastructure concerns to reduce associated energy and GHG implications.**

Grant applications have been submitted under various provincial funding programs to address concerns associated with stormwater infrastructure and associated inflow and infiltration into the sanitary sewer system (causing increases in GHG emissions), as well as addressing sanitary sewer system overflows due to excessive water consumption. There is a need to ensure that these projects receive the necessary attention and funding so that the resulting infrastructure savings and operational cost recovery can be realized.

▶ **Support education on residential and commercial energy consumption reduction.**

Promote incentives and educational materials offered by utilities and senior government to reduce community energy consumption.

- ▶ **Seek funding to conduct a Community Energy Plan\* to develop a detailed implementation strategy to achieve the following actions:**
  - ▶ **Encourage the reuse and recovery of waste to provide potential energy options.**
    - a. Investigate the opportunity to recover waste oil from ships in the Port for use in furnaces that can be converted to run on used oil.
    - b. Investigate the opportunity to use waste wood products for a biomass energy project to heat a municipal building.
    - c. Investigate the opportunity to integrate a waste-to-energy facility as part of the waste management framework.
  - ▶ **Encourage residents and local businesses to adopt new technologies and best practices to conserve energy and reduce GHG emissions.**
  - ▶ **Encourage the development and uptake of renewable energy from sources such as biomass, geothermal, solar, tidal, and wind.**

\*A detailed list of local government resources to fund a Community Energy Plan can be found in the Community Energy Association's publication: ***Funding Your Community Energy and Climate Change Initiatives***, August 2010 <http://www.communityenergy.bc.ca/news/funding-your-community-energy-and-climate-change-initiatives-2010-update>

## Conclusion & Next Steps

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This discussion paper has been developed to bring Council up to speed on the state of local government climate action efforts in BC to inform a recommended approach for the District to address Bill 27. Information and options have been presented for the District's consideration, and the consultant will finalize a plan to update the OCP based on feedback from the District administration and Council.

A draft "Schedule A" has been developed to provide a sense for how the OCP update could take shape (**Appendix G**).

Appendix A – Climate Science 101



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## Climate Science 101

### Explaining the Top Ten Myths about Climate Change

Courtesy of John Cook, [skepticalscience.com](http://skepticalscience.com)

**1. "It's the sun."**

Fact: In the last 35 years of global warming, the sun has shown a slight cooling effect. Sun and climate have been going in opposite directions. [More information ...](#)

**2. "Climate has changed before."**

Fact: Natural climate change in the past proves that climate is sensitive to an energy imbalance. If the planet accumulates heat, global temperatures will go up. Currently, CO2 is imposing an energy imbalance due to the enhanced greenhouse effect. Past climate change actually provides evidence for our climate's sensitivity to CO2. [More information ...](#)

**3. "There is no consensus."**

Fact: That humans are causing global warming is the position of the Academies of Science from 19 countries plus many scientific organisations that study climate science. More specifically, 97% of climate scientists actively publishing climate papers endorse the consensus position. [More information ...](#)

**4. "It's cooling."**

Fact: Empirical measurements of the Earth's heat content show the planet is still accumulating heat and global warming is still happening. Surface temperatures can show short term cooling when heat is exchanged between the atmosphere and the ocean, which has a much greater heat capacity than the air. [More information ...](#)

**5. "Models are unreliable."**

Fact: While there are uncertainties with climate models, they successfully reproduce the past and have made predictions that have been subsequently confirmed by observations. [More information ...](#)

**6. "Temperature records are unreliable."**

Fact: Numerous studies into the effect of urban heat island effect and microsite influences find they have negligible effect on long term trends, particularly when averaged over large regions. [More information ...](#)

**7. "It hasn't warmed since 1998."**

Fact: The planet has continued to accumulate heat since 1998 - global warming is still happening. Nevertheless, surface temperatures show much internal variability due to heat exchange between the ocean and atmosphere. 1998 was an unusually hot year due to a strong El Nino. [More information ...](#)

**8. "An ice age was predicted in the '70s."**

Fact: 1970s ice age predictions were predominantly media based. The majority of peer reviewed research at the time predicted warming due to increasing CO2. [More information ...](#)

**9. "We're heading into an ice age."**

Fact: The warming effect from CO2 increases greatly outstrips the influence from orbital changes or variations in solar activity even if solar levels were to drop to Maunder Minimum levels. [More information ...](#)

**10. "Antarctica is gaining ice."**

Fact: While the interior of East Antarctica is gaining land ice, overall Antarctica is losing land ice at an accelerating rate. Antarctic sea ice is growing *despite* a strongly warming Southern Ocean. [More information ...](#)

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- PICS at a glance
- Governance
- Events
- Research
- Fellowships
- Briefing program
- News scan
- Climate Solutions Network
- Publications
- News archives
- Climate science 101**
- Links
- Contact us

## Appendix B – Excerpts from GCC Carbon Neutral Communiqué

### GCC Communiqué on SMARTTool March 2011



The overwhelming majority of BC local governments have demonstrated local leadership by voluntarily signing onto the BC Climate Action Charter, committing to take action and develop strategies to achieve the following three goals: being carbon neutral in their corporate operations by 2012, measuring and reporting on their community GHG emissions; and creating complete, compact, energy efficient rural and urban communities.

The Joint Provincial-UBCM Green Communities Committee (GCC) has been established under the Climate Action Charter to assist local government signatories in achieving these commitments. As part of its mandate, the GCC is responsible for establishing a common approach to carbon neutrality for the purposes of the Climate Action Charter and has been working with BC local to ensure they have the right tools and support necessary to become carbon neutral by 2012.

As part of this work the GCC approved a piloting of SMARTTool, a web-based, carbon emissions inventory and reporting tool used by the Provincial government with a limited number of local governments in April 2010. The primary objective of the pilot was to determine the ability of SMARTTool to measure BC local government corporate emissions in a cost effective, efficient and consistent manner. Following a successful evaluation of the pilot, the GCC is pleased to be able to recommend SMARTTool for use by local governments, to assist them in meeting their carbon neutral commitments for the purposes of the Climate Action Charter.

#### What is SMARTTool and how is it delivered?

SMARTTool is a web based GHG emissions inventory and reporting tool which provides a standardized approach to calculating and reporting an organization's corporate greenhouse gas emissions. The tool was originally developed to help provincial public sector organizations meet their legislated requirements to be carbon neutral by 2010. SMARTTool was developed by Shared Services BC, a provincial agency providing provincial ministries and other public sector organizations with key support services including information technology, accounting, procurement and real estate services. Shared Services BC will deliver SMARTTool directly to BC local governments and will work with them to set up their corporate emissions inventories, train users and structure their reports based on individual community preferences.

#### What are the benefits of using SMARTTool?

SMARTTool offers local governments a number of benefits including:

- **a consistent, cost-effective approach** for BC local governments to calculate and report on their corporate GHG emissions inventories
- **one-on-one training and ongoing support** to set up and manage a customized emissions profile and assist in resolving technological and methodological issues specific to local government corporate boundaries
- on-going application of **current emissions factors** to ensure valid and verifiable data outputs
- **flexibility** in how emissions are reported, including the level of detail that data is collected and reported on
- **a basis for planning** emission reductions and monitoring progress
- the ability to **estimate energy consumption** where direct data is not available
- **ongoing upgrades and improvements** to the service, software and calculation methodologies
- the ability to **generate Climate Action Revenue Incentive Program reports**

#### How much will it cost?

Costs for SMARTTool are allocated based on the tonnes of GHGs the user emits annually, according to the following structure:

- Year One (on-boarding/set up): \$900 or \$1.00 per tonne, whichever is greater
- Year Two: \$300 or \$0.95 per tonne, whichever is greater

*The complete Communiqué can be accessed at: [www.toolkit.bc.ca/carbon-neutral-government](http://www.toolkit.bc.ca/carbon-neutral-government)*

**As an incentive, The GCC will be offering a 50% cost reduction for local government users during their 2011/12 on-boarding year**

**Appendix C - Community Climate Action Efforts: Overview of NW BC Communities**

<b>Community (population size)</b>	<b>Signed Climate Action Charter</b>	<b>Strategy to address Bill 27 (climate change targets, policies and actions)</b>	<b>Climate Change Actions</b>
Houston (3,000)	Yes, received \$5,845 from Climate Action Revenue Incentive Program (CARIP, or carbon tax rebate) in 2010	Complete OCP review conducted in 2010, Adopted provincial targets (33% reduction by 2020, with interim targets) in OCP, included long list of Goals, Objectives, Policies, and detailed Actions (e.g. develop Community Energy Plan/Integrated Community Sustainability Plan & corporate climate action plan, purchase carbon offsets to become carbon neutral, develop a sustainable infrastructure development checklist, etc.)	geothermal heating for the pool, arena and curling facilities (district heating system); solar powered park lighting; using heat recovery from sewer treatment to heat the public works building, wood stove exchange program
Smithers (5,500)	Yes, received \$8,506 from CARIP,	Complete OCP review conducted in 2010, included "Climate Change Considerations" section in OCP, Climate change policies and actions incorporated into each chapter of the OCP, Committed to conducting "Community & Corporate (Carbon Action) Sustainability Plan 2011" to define targets and strategies to achieve targets, Piloted SMARTTool GHG inventory framework	Energy efficient fleet program, electric Zamboni, anti-idling policy, used Gas Tax funds for perimeter trail system, wood stove exchange program
Telkwa (1,300)	Yes, received \$1,618 from CARIP	Currently in the process of developing an Integrated Community Sustainability Plan which will be used to update the OCP, adopting provincial targets	
Granisle (400)	Yes, received \$1,312	Currently working with the Community Energy Association on a Corporate and Community Energy Plan, which will be used to update OCP	
Port Edward (570)	Yes, received \$1,920	Info unavailable	
Terrace (11,700)	Yes, received \$15,782	Conducted an Integrated Community Sustainability Planning project "Terrace 2050," which they integrated with and used to guide the OCP review, integrated climate action activities across OCP categories	Established Sustainability Task Force and a Sustainability Office with staff/budget resources
Prince Rupert (13,000)	Yes, received \$29,436	Conducted an Energy Plan in 2007 that established targets for both community (33% reduction by 2020) and corporate emissions (10% reduction by 2012, carbon neutral by 2012). Updated OCP in 2010 with an integrated planning process to include CEP targets, policies and actions.	Established a "Green Task Force Committee"
New Hazelton (600)	Yes, received \$592	Info unavailable	
Kitimat (9,000)	No	Info unavailable	
Burns Lake (2,200)	Yes, received \$2,904	Conducted an award winning Community Energy Plan, and used CEP to update OCP. In the process of amending OCP to accommodate a District Energy System. Recently hosted Climate Action Boot-camp for Council.	Idle-free policy, constructing biomass system for arena, working on District Energy System, installing solar lighting in parks
Kitimat-Stikine RD	Just signed Charter in March, 2011	Has not yet addressed Bill 27 commitments, but will be looking to do so this year	
Bulkley-Nachako RD	Yes, received \$4,592	Adopted provincial targets and included high-level policies to reduce GHG emissions in fairly extensive OCP update	

## Appendix D - Community Survey Response Summary

Survey Questions	Response	
<b>Impacts of Climate Change</b>	<b>Yes</b>	<b>No</b>
Are you concerned about the impacts of climate change?	73%	27%
Have you personally experienced/witnessed the impacts of climate change?	80%	20%
<input type="checkbox"/> Receding snow pack and glacial retreat	96%	
<input type="checkbox"/> Increased number/intensity of forest fires	46%	
<input type="checkbox"/> Increased outbreaks of pests (e.g. mountain pine beetle, mosquitoes)	50%	
<input type="checkbox"/> Increased intensity and frequency of storm events	67%	
<input type="checkbox"/> Sea level rise and/or storm surges	38%	
<input type="checkbox"/> Other: more winds, wind	8%	
<b>Interest in Reducing Energy Consumption</b>	<b>Yes</b>	<b>No</b>
Are you interested in reducing your energy consumption?	93%	7%
<input type="checkbox"/> Because you want to reduce your energy bill	21%	
<input type="checkbox"/> Because you want to conserve fossil fuels for future generations	18%	
<input type="checkbox"/> Because you want to minimize climate change	4%	
<input type="checkbox"/> All of the above	57%	
Have you had an energy audit done for your home/business?	13%	87%
If not, would you be willing to pay for an energy audit (average cost < \$100)?	38%	63%
If you have had an audit done, which improvements did you make as a result of the audit?		
<input type="checkbox"/> Draft proofing	100%	
<input type="checkbox"/> Added insulation (basement, attic, walls, etc.)	100%	
<input type="checkbox"/> Replaced furnace	100%	
<input type="checkbox"/> Installed windows	25%	
<input type="checkbox"/> Other: use energy efficient appliances	75%	
<b>Heating &amp; Cooling Sources</b>	<b>Yes</b>	<b>No</b>
What is your primary home/business heating source?		
<input type="checkbox"/> Electricity	47%	
<input type="checkbox"/> Heating oil	40%	
<input type="checkbox"/> Wood	30%	
<input type="checkbox"/> Propane	10%	
Do you have a secondary heating source? Please indicate source below.	77%	23%
<input type="checkbox"/> Electricity	48%	
<input type="checkbox"/> Heating oil	4%	
<input type="checkbox"/> Wood	22%	
<input type="checkbox"/> Propane	13%	
<input type="checkbox"/> Other: pellets x 2, generator	13%	
<b>Large Appliances</b>	<b>Yes</b>	<b>No</b>
Do you have a washing machine?	100%	0%
If Yes, is it an Energy Star model?	57%	43%
Do you have a dishwasher?	40%	60%
If Yes, is it an Energy Star model?	67%	33%
Is your refrigerator an Energy Star model?	80%	20%
Do you have a second refrigerator?	39%	61%
When washing clothes, respondents use cold water...		
<input type="checkbox"/> All the time	68%	
<input type="checkbox"/> Half the time	29%	
<input type="checkbox"/> Never	4%	
When drying clothes, respondents use a clothes line...		

<input type="checkbox"/> All the time	4%	
<input type="checkbox"/> Half the time	36%	
<input type="checkbox"/> Never	61%	
<b>Transportation</b>	<b>Yes</b>	<b>No</b>
<b>In the winter, when going to work or school, respondents:</b>		
<input type="checkbox"/> Walk	47%	
<input type="checkbox"/> Bike	7%	
<input type="checkbox"/> Carpool	3%	
<input type="checkbox"/> Drive	53%	
<input type="checkbox"/> Don't travel (work from home)	10%	
<b>In the summer, when going to work or school, respondents:</b>		
<input type="checkbox"/> Walk	50%	
<input type="checkbox"/> Bike	40%	
<input type="checkbox"/> Carpool	0%	
<input type="checkbox"/> Drive	40%	
<input type="checkbox"/> Don't travel (work from home)	7%	
<b>When running errands, respondents:</b>		
<input type="checkbox"/> Walk	40%	
<input type="checkbox"/> Drive	60%	
<b>If there was a weekly bus to Terrace, would you pay to use it?</b>	75%	25%
(comments: use would depend on cost and schedule, many expressed enthusiastic interest in getting this)		
<b>Water Use</b>	<b>Yes</b>	<b>No</b>
<b>Do you have a low-flow toilet installed?</b>	37%	63%
<b>Do you have a low-flow shower head installed?</b>	43%	57%
<b>Do you "bleed" your taps in the winter to prevent freezing? (sometimes: 30%)</b>	33%	37%
<b>Comments or suggestions related to the survey questions</b>		
<ul style="list-style-type: none"> <li>▪ Not all options for energy reduction are viable for northern communities such as Stewart</li> <li>▪ Turn off the Christmas lights downtown (it is March now, turn them on Dec. 1st and off before Jan. 15<sup>th</sup>)</li> <li>▪ Bus service is only from A to B. Medical appointments are not always on time. How can a person get the bus to come home?</li> <li>▪ No questions about recycling, composting, idling (a big problem in Stewart), recreational vehicles (i.e. Snowmobiles)</li> <li>▪ More involvement from residents</li> <li>▪ Should have been double-sided printed (good catch! This was the request to the printer and they didn't print the survey correctly...much to the Project Planner's dismay!)</li> <li>▪ Climate change is a cyclical thing – happens over thousands of years (where is global warming this winter?)</li> </ul>		
<b>Priorities for taking action on climate change in Stewart</b>		
<ul style="list-style-type: none"> <li>▪ Reduce, reuse and recycle (composting) x 6</li> <li>▪ Walk more, drive less x 2</li> <li>▪ Our town needs bike racks</li> <li>▪ Keep our water clean</li> <li>▪ Conserve hydro</li> <li>▪ Get cloth's line</li> <li>▪ Grow locally</li> <li>▪ Turn off unnecessary lights</li> <li>▪ Making my own home more energy efficient</li> <li>▪ We need to clean up the garbage dump which is leaching poison into our water</li> <li>▪ We should develop a food security plan, encourage composting, and enhance our recycling program</li> <li>▪ Encouraging others to stop idling and start recycling and composting</li> <li>▪ Encouraging the District of Stewart to launch an educational campaign (targeting idling, recycling/composting,</li> </ul>		

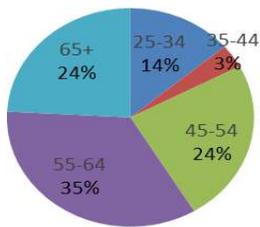
saving water and energy)

- Reduced trips to Terrace by buying bulk
- Buying environmentally-friendly products
- Focusing on enviro-friendly activities, such as hiking, biking, snowshoeing (instead of snowmobiling)
- A community greenhouse and garden would be lovely
- To educate our Mayor and Council of the importance to work with the recycling group to guide and help in the direction needed to succeed
- To make sure our elected officials somewhat understand how important and fragile our environment is
- To support local groups working to achieve important environmental goals (100% financially) and work with them to guide them in the direction needed
- Less wood burning stoves
- Attract people to fix the town and that will clean it up - Stewart is not promoted enough and is not senior friendly
- We need a mayor who cares more
- None – leave things as they are!
- To save money – living costs are getting more expensive for a fixed income

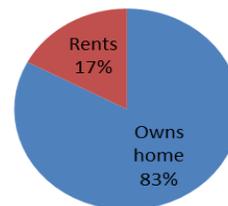
### Demographics

The following categories reflect the personal information provided by each of the respondents.

**Age of Respondents**



**Home Ownership**



### Appendix E - Discussion Summary: Community Conversation on....Taking Action on Climate Change

Feedback was provided in response to the following questions:

- 1) Please provide some ideas or possible strategies to save energy and take action on climate change in Stewart?
- 2) What are some of the barriers to implementing these ideas and what could be done to overcome them?

#### Ideas or possible strategies to save energy and take action on climate change in Stewart:

*Comments listed in the order of amount of times provided, i.e. repeated comments first*

#### Transportation

Active transportation:

- Promote and encourage walking/biking within the community
- Develop walking-friendly streets
- Electric bikes for community members (older people)
- Challenge people to walk for a week and see how much money (and gas) they save
- Use bicycle with basket to run errands (mail, etc.)
- Need bike racks downtown

Public transportation:

- Develop public transportation (inter-community transport & transport to other centres)
- Support community ride-sharing
- Develop ride-share board/communication forum

Fuel consumption reduction:

- Stop idling cars and trucks (i.e. encourage people to turn off their engines when stopped)
- “Idle free zones” – education on health implications
- Adopt an anti-idling bylaw - large trucks idling causes poor air quality in community
- Bylaw officer regarding idling
- Increase local food security

**Buildings**

Renewable energy:

- Alternative energy – wind, solar, wave/tidal energy
- Wood stove exchange program
- Replace old wood burning and other heating appliances with more efficient models
- Explore new sources of energy – wind, tides, geothermal
- Air quality very poor from wood stoves (unbearable)

Energy conservation:

- Retrofit buildings to make more efficient – insulation, energy efficient appliances and heat sources
- Turn off lights and turn down heat
- Distribute BC Hydro energy reduction packages
- Build new buildings to green standards
- Challenge people to turn off lights, TV, etc. for a week and see the difference in the Hydro bill

**Solid Waste**

Reduce/Reuse/Recycle:

- Recycling!
- Reduce: stop using disposables (water bottles, printing, health care products, diapers, etc.)
- Support reuse of items
- Composting programs
- Provide sorting bins for recycling
- Education about: leachate from landfill, gardening opportunities of composting
- Recycling is happening – need education for people to increase
- Discourage littering in the ditches (plastic bags, cans, Styrofoam cups)
- Stewart Health Centre reduces and recycles extensively

Resource Recovery:

- Recover waste oil from ships (distribute/use for possible District energy system, heat for seniors)
- Reuse waste (turn waste energy → waste to energy facility)
- Industrial symbiosis
- Local industry projects – using wood waste
- Recover the methane from the dump – burn for energy
- Install/promote furnaces that run on used oil from ships in the Port

**Other...**

- Bring Hydro (electric hook-up) to the Port for ships (attracts business, cleaner air and water)
- Make sure mining and forestry companies operating in our area adopt environmentally friendly practices
- Replant forests promptly-helps environment and creates jobs
- Build dry land loading dock – load wood on land = no bark in ocean
- Health care and dental for workers....
- Economic growth (industry) helps build the economy to develop the community
- Support/encourage industry that is sustainable
- Huge infrastructure expense to the community to support short-term industry (boom & bust)

**Some of the barriers to implementing these ideas and solutions to overcome them:**

Barriers:

- Old beliefs and traditions
- Lack of funding
- Lack of education/awareness/understanding of issues and solutions

Solutions:

- Education program about things residents and businesses can do
- Offer basic education (links to health: anti-idling=air quality, active transportation)
- “Sustainability” ties it all together – promote sustainability
- District host movie “An Inconvenient Truth”
- Strong leadership by municipal government
- Bylaws (anti-idling)
- Seek grant funding

**Appendix F – Excerpts from Stewart 2007 CEEI Report**



Stewart District Municipality  
Updated 2007 Community Energy and Emissions Inventory

Page 2 of 8  
June 30, 2010

**Sectors**

<b>On Road Transportation</b>		<u>Vehicles</u>	<u>Consumption</u>	<u>Measurement</u>	<u>Average-VKT(km)</u>	<u>Energy (GJ)</u>	<u>CO2e (t)</u>	
Small Passenger Cars	Gasoline	40	49,863	Litres	13,062	1,745	120	
	Diesel Fuel	< 10	1,613	Litres	14,675	62	4	
						<b>Small Passenger Cars</b>	<b>1,807</b>	<b>124</b>
Large Passenger Cars	Gasoline	24	60,637	Litres	19,093	2,122	144	
	Diesel Fuel	< 10	2,307	Litres		88	6	
						<b>Large Passenger Cars</b>	<b>2,210</b>	<b>150</b>
Light Trucks, Vans, SUVs	Gasoline	221	669,436	Litres	19,717	23,430	1,604	
	Diesel Fuel	47	107,797	Litres	17,930	4,129	294	
	Other Fuel	< 10	7,189	Litres	12,775	275	11	
						<b>Light Trucks, Vans, SUVs</b>	<b>27,834</b>	<b>1,909</b>
Commercial Vehicles	Gasoline	< 10	34,531	Litres	14,820	1,209	81	
	Diesel Fuel	< 10	36,196	Litres	18,182	1,386	97	
	Other Fuel	< 10	718	Litres		28	1	
						<b>Commercial Vehicles</b>	<b>2,623</b>	<b>179</b>
Tractor Trailer Trucks	Diesel Fuel	14	342,584	Litres	61,496	13,121	922	
						<b>Tractor Trailer Trucks</b>	<b>13,121</b>	<b>922</b>
Motorhomes	Gasoline	< 10	1,661	Litres	2,189	58	4	
						<b>Motorhomes</b>	<b>58</b>	<b>4</b>
Motorcycles, Mopeds	Gasoline	< 10	1,906	Litres	6,422	67	4	
						<b>Motorcycles, Mopeds</b>	<b>67</b>	<b>4</b>
Bus	Gasoline	< 10	27,713	Litres	36,050	970	65	
	Diesel Fuel	< 10	18,849	Litres		645	45	
						<b>Bus</b>	<b>1,615</b>	<b>110</b>
						Gasoline:	29,601	2,022
						Diesel:	19,431	1,368
						Other Fuel:	303	12
<b>On Road Transportation Totals</b>						<b>All Fuels:</b>	<b>49,335</b>	<b>3,402</b>



Stewart District Municipality  
Updated 2007 Community Energy and Emissions Inventory

Buildings	Type	Connections	Consumption	Measurement	Energy (GJ)	CO2e (t)
Residential	Electricity	319	4,935,730	Kilowatt Hours	17,769	122
	Heating Oil		2,548	GigaJoules	2,548	180
	Propane		6,942	GigaJoules	6,942	424
	Wood		18,833	GigaJoules	18,833	7
<b>Residential</b>					<b>46,092</b>	<b>733</b>
Commercial/Small-Medium Industrial	Electricity	95	3,511,852	Kilowatt Hours	12,643	87
	<b>Commercial/Small-Medium Industrial</b>					<b>12,643</b>
Electricity:					30,412	209
Natural Gas:						
Propane:					6,942	424
Wood:					18,833	7
Heating Oil:					2,548	180
<b>Buildings Totals</b>					<b>58,735</b>	<b>820</b>

Solid Waste	Mass (t)	CO2e (t)
Community Solid Waste	251	383

Grand Total	CONSUMPTION	ENERGY (GJ)	CO2e (t)
Diesel Fuel	507,348 L	19,431	1,368
Electricity	8,447,682 kWh	30,412	209
Gasoline	845,747 L	29,801	2,022
Heating Oil	2,548 GJ	2,548	180
Other Fuel	7,907 L	303	12
Propane	6,942 GJ	6,942	424
Solid Waste	251 T	0	383
Wood	18,833 GJ	18,833	7
<b>Total of Transportation / Buildings / Solid Waste:</b>		<b>108,070 GJ</b>	<b>4,605 tonnes</b>

Access the complete report at: [www.env.gov.bc.ca/cas/mitigation/ceei/RegionalDistricts/Kitimat-Stikine/ceei\\_2007\\_stewart\\_district\\_municipality.pdf](http://www.env.gov.bc.ca/cas/mitigation/ceei/RegionalDistricts/Kitimat-Stikine/ceei_2007_stewart_district_municipality.pdf)

Appendix G – Sample “Schedule A”

District of

# Stewart



## OFFICIAL COMMUNITY PLAN

BYLAW NO. XXXX, 2011

Schedule “A”

*Canada’s Most Northerly Ice Free Port*



## 4.0 FUTURE GROWTH AND CONSIDERATIONS

### 4.7 Climate Change Considerations

The District of Stewart recognizes that increases in the sources and depletion of the sinks of greenhouse gas (GHG) emissions are contributing to climate change. Climate change is already negatively impacting British Columbia (BC) communities, and impacts will worsen if no action is taken.

The Government of BC is taking decisive action in all sectors of the economy to reduce emissions and set the course for a low-carbon economy. In 2007, the Province committed to the following goals:

- By 2020, BC will reduce its GHG emissions by 33 percent below 2007 levels;
- By 2050, BC will reduce its GHG emissions by 80 percent below 2007 levels; and
- By 2010, the BC public sector will be carbon neutral.

In 2008, the Province passed the *Local Government (Green Communities) Statutes Amendment Act* (or Bill 27) requiring all local governments to establish climate action targets, as well as policies and actions to achieve such targets, in their Official Community Plans (OCP) by May 31, 2010. To satisfy the legislation, OCPs must include at least one measurable (quantifiable) GHG emission reduction target, along with policies and actions to achieve the target.

In 2010, the Province released a 2007 Community Energy and Emissions Inventory (CEEI) report for each local government in BC, reporting on community-wide energy consumption and GHG emissions from transportation, buildings and solid waste. Although the data related to building and solid waste emissions is quite accurate, the transportation emissions data cannot currently capture changes over time (as it measures vehicle ownership not vehicle use). As such, more work is required to establish an accurate GHG emission baseline.

For the purposes of complying with section 877 (3) of the *Local Government Act* and supporting the spirit and intention of provincial goals, the District of Stewart endorses the following provincial GHG reduction targets:

- Community GHG emissions will be reduced by 33 percent below 2007 levels by 2020; and
- Community GHG emissions will be reduced by 80 percent below 2007 levels by 2050.

Recognizing the interrelated, cross-jurisdictional nature of climate change, the District is committed to reducing its contribution to climate change where possible. However, achieving significant GHG reductions is largely dependent on technology change, the actions of senior-level government and the private sector. For example, local government control over the GHG emission intensity of vehicles and buildings is somewhat limited in that other levels of government largely set these standards. This is particularly true in small, rural communities experiencing limited growth, as a great deal of local government leverage in affecting GHG reductions relates to influencing the shape and form of development. Additionally, local government capacity to implement GHG reduction projects is largely dependent on federal and provincial funding.

Nevertheless, as the most direct point of contact with communities, local government has an important role to play in influencing community energy consumption, particularly with regard to encouraging development and land use patterns that are more energy efficient and self-sustaining. This plan seeks to encourage the reduction of GHG emissions in the District of Stewart in a manner that promotes the long-term economic, environmental and social stability of the community.

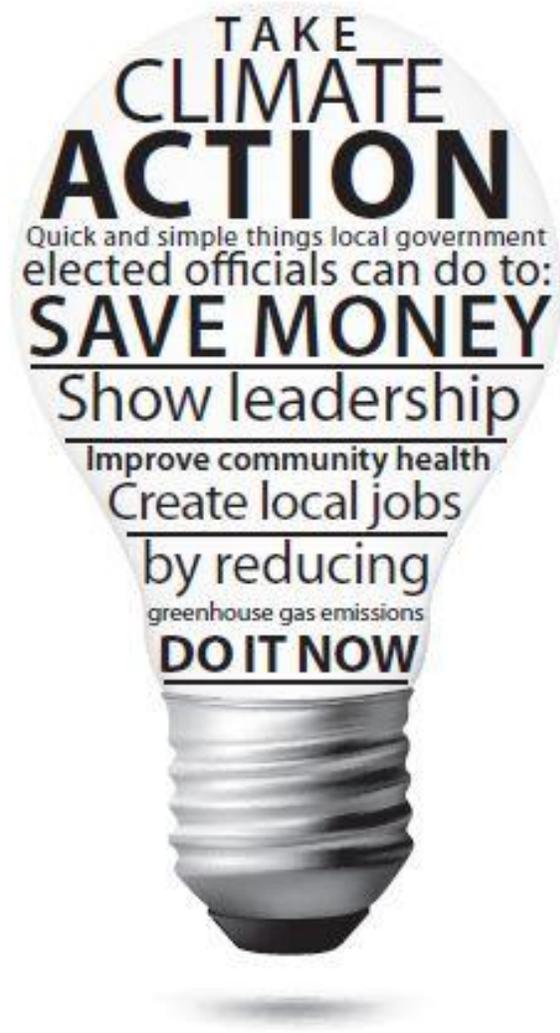
#### Policies

- a) Support and facilitate energy efficient development and land use patterns to continue to create a complete, compact community.
- b) Promote energy efficiency, reduced energy costs, and the reduction of the carbon intensity of energy.
- c) Work cooperatively with senior levels of government to reduce GHG emissions and energy consumption.

**Actions:**

- a) Develop a strategy to measure and reduce corporate energy consumption.
- b) Compact, energy efficient development and land use patterns are supported through the implementation of the following existing OCP policies:
  - 5.1.3** Encourage a future urban development form which follows the principle of infilling and maintains a compact urban form consistent with the provision of existing infrastructure and public services.
  - 5.1.6** Emphasize to the senior levels of government, the District of Stewart's regional role as a major community with infrastructure to service an expanded population and to discourage the indiscriminate location of settlement in the rural hinterland.
  - 5.2.8**
    - a) All retail, personal service and commercial development shall be concentrated in the present downtown core.
    - b) Higher density residential development as part of the commercial enterprise shall be allowed in the downtown core as part of a comprehensive development (encouraging mixed-use development).
- c) During subsequent OCP updates, integrate energy management considerations into future policies and apply a climate action planning lens to community development considerations.
- d) Support community transportation options.
- e) Support local active transportation options.
- f) Develop an idling reduction strategy.
- g) Address landfill concerns, investigating opportunities for resource recovery, and support recycling and reuse.
- h) Address water infrastructure concerns to reduce associated energy and GHG implications.
- i) Support education on residential and commercial energy consumption reduction.
- j) Seek funding to conduct a Community Energy Plan to develop a detailed implementation strategy to achieve the following actions:
  - Encourage the reuse and recovery of waste resources to provide potential energy options.
    - Investigate the opportunity to recover waste oil from ships in the Port for use in furnaces that can be converted to run on used oil.
    - Investigate the opportunity to use waste wood products for a biomass energy project to heat a municipal building.
    - Investigate the opportunity to integrate a waste-to-energy facility as part of the waste management framework.
  - Encourage residents and local businesses to adopt new technologies and best practices to conserve energy and reduce GHG emissions.
  - Encourage the development and uptake of renewable energy from sources such as biomass, geothermal, solar, tidal, and wind.

Appendix H – Quick Action Examples for Elected Officials, Ministry of Community, Sport & Cultural Development



For quick action examples  
[www.toolkit.bc.ca/eoq](http://www.toolkit.bc.ca/eoq)



**SET A TARGET** for reducing greenhouse gases. Local governments must have targets in Official Community Plans (OCP) by May 31, 2010 and in Regional Growth Strategies (RGS) by May 31, 2011.

**Get started**  
Add an *emissions reduction target* to your OCP or RGS. Assign clear responsibility and authority to staff for achieving your targets. See targets workbook at [www.toolkit.bc.ca/eoq](http://www.toolkit.bc.ca/eoq)

Find out *how much greenhouse gas* your community produces. What are the largest sources of emissions? There is a Community Energy and Emissions Inventory (CEEI) for every local government in B.C.

Identify *three things* your government will do this year to reduce greenhouse gas emissions.

**Go further**  
Develop a *Community Energy and Emissions Plan* (CEEP) to decide how best to reduce community-wide emissions and energy use.

**LEAD BY EXAMPLE**

Local governments all over British Columbia are taking innovative approaches to greenhouse gas reduction. Look at ways to reduce the "carbon footprint" from your local government's operations.

**Get started**

Conduct an *energy audit* of existing local government buildings and facilities. Identify where you can save the most money and reduce emissions.

**Convert streetlights** and indoor lights to high efficiency bulbs. Don't forget to turn off lights, computers, copiers, etc. when not in use. Check out BC Hydro Power Smart.

Get an *E3 fleet review* to increase fuel efficiency, reduce emissions and reduce costs. Encourage staff to take E3 driver training to reduce emissions. Carpool or take transit to meetings, and encourage staff to do the same.

**Go further**

Look at ways to capture and use heat and energy from "waste."

**MAKE IT EASY TO BE GREEN** Encourage, enable or require energy savings throughout your community.

**Get started**

*Support smart growth* developments that create livable, walkable communities where people have less need to drive. Use a climate action "lens" for all land-use planning decisions.

**Provide green building incentives** or rebates for energy-efficient buildings. Ensure your bylaws make it easy for residents and businesses to use "green" energy sources such as geothermal and solar energy for hot water heating.

**Create disincentives.** Set higher rates for water use – less water consumed means less energy to treat and pump water and wastewater.

**Set requirements** for energy efficiency. Establish development permit areas for greenhouse gas reduction and energy/water conservation. Implement a community anti-idling bylaw to improve air quality and reduce emissions.

**Educate and encourage** residents to take action.

**Go further**  
Develop an **active transportation plan** that provides people with alternatives to single-occupant vehicles, and encourages healthy living.

**PROTECT YOUR ASSETS** Forests and wetlands act as "carbon sinks." Agricultural lands provide local food, supporting community jobs and reducing the distance that food travels from farm to plate.

**Get started**  
**Protect and plant trees** to provide shade and windbreaks for buildings. This reduces energy use and absorbs carbon dioxide (a greenhouse gas).

**Protect wetlands and treed areas** in and around communities. These "carbon sinks" absorb carbon dioxide.

Protect and provide **places where people can grow food**, even in high density developments. Community gardens, green roofs and parks all offer food-growing potential.

**Go further**  
**Protect agricultural land**, and encourage **local food growers** and food processing businesses. This supports local jobs, and reduces greenhouse gas emissions as food has less distance to travel.

**BE STRATEGIC** Work with your staff and community to achieve your emissions reductions. Think long term.

**Get started**  
**Plan ahead.** Update accounting systems to track carbon when entering your fuel bills – this provides an emissions inventory without a lot of extra work.

**Dedicate budget and staff time.** Allocate resources to achieving emissions reduction – it can be cheaper to take action now than to wait for later. Engage staff in development of new ideas and approaches.

**Create learning opportunities.** Find out about BC Hydro's funding for Community Energy Managers.

**Involve key stakeholders and the public.** Citizens can provide creative input into emissions reduction planning and can help with implementation.

**Prepare for future climates.** Consider the future impacts of warmer temperatures, rising sea levels, drought, storms, etc. in all land-use decisions.

**Go further**  
**Link energy reduction to other community strategies.** Encourage "green jobs" (such as energy assessors or specialists in energy-efficiency home retrofits) as part of your economic development strategy or community social planning.

## DO YOU HAVE QUESTIONS?

### Need more information?

Visit [www.toolkit.bc.ca](http://www.toolkit.bc.ca) and [www.bchydro.com/powersmart](http://www.bchydro.com/powersmart) for online resources.

Contact a Smart Planning Facilitator for advice on your climate action planning project. (250) 392-1400 or [www.fraserbasin.bc.ca/programs/smart\\_planning.html](http://www.fraserbasin.bc.ca/programs/smart_planning.html)



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