Carbon Neutral Operations Plan

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1. Introduction

1.1 Executive Summary

The District of Lake Country has committed to becoming a carbon neutral operation by the end of 2012. As a signatory to the British Columbian Provincial Climate Action Charter, the municipality has committed to eliminating or offsetting 100% of operational greenhouse gas emissions by the end of 2012.

In 2008, District operations emitted 664 tonnes of carbon dioxide equivalent (tCO_2e) gases. In 2009, the District emitted 801 tCO_2e. In 2010, the District emitted 789 tCO_2e, of which 88.5 tCO_2e may be offset by the Lake Country Hydroelectric Generating Station. These tallies include tailpipe emissions from District or contractor vehicles, emissions from heating buildings, and emission-equivalents from power use.

Based on a detailed analysis of District emissions data, this Plan includes measures to reduce or eliminate emissions from these sources. These measures will guide the District in making decisions to reduce emissions moving forward.

Emissions that cannot be eliminated must be offset. This process will involve the purchase of carbon offsets or the trading of CO_2 emissions. The plan will detail these processes and the costs associated with them. By establishing the costs of offsets, the District will be able to make cost effective trade-offs between emission reductions and emission offsets.

Monitoring of the Districts corporate greenhouse gas emissions will occur on an annual basis and reports will be submitted both to Council and to the provincial government in order to fulfill commitments under the Climate Action Charter. A complete update and review of the Carbon Neutral Operations Plan will occur every 5 years.

1.2 Purpose

In 2007, the District of Lake Country signed onto the British Columbian Climate Action Charter. The Charter committed the District to becoming carbon neutral in all municipal operations by the end of 2012.

The Carbon Neutral Operations Plan is intended to help the District take a principled approach to emissions reduction that extends beyond a purely offset based model, and to achieve Carbon Neutrality in a cost effective way that provides additional benefits to the organization and the community.

2. Measurement

2.1 Sources Measured

The Climate Action Charter requires that local governments become carbon neutral in the delivery of so-called 'traditional services', which are consistent across all Charter signatories.

The six traditional service areas are:

a. Administration and Governance
b. Drinking, Storm and Waste Water
c. Solid Waste Collection, Transportation and Diversion
d. Roads and Traffic Operations
e. Arts, Recreation and Cultural Services
f. Fire Protection.

Only emissions caused by direct District action or under District control must be included. Emissions related to new construction, business travel, employee commuting and the external production of goods used for the services are not included.

As a general guideline for measuring emissions, if the District pays for the service the District must account for the emissions related to that service.

2.2 Methodology

The District first categorised services provided into the 6 traditional service areas.

Once all of the available data was collected for 2008 through 2010, the total energy consumed was converted into carbon dioxide equivalents (tCO_2e) using the following conversion factors:

Carbon Dioxide Equivalent Conversion Factors

Fuel type	Unit of measure	Emission Conversion Factor* (tCO_2e/unit measurement)
Gasoline	Litres	0.00241
Diesel	Litres	0.00276
Natural Gas	Gigajoules[2]	0.051
Propane	Litres	0.00154
Electricity	kWh	0.000022

* Conversion factors from the Greenhouse Gas Emission Assessment Guide issued by the BC Ministry of Community Development July 2009

2.3 Assumptions and Limitations

The datasets are not complete, and some assumptions have been made. These assumptions and limitations will be reduced as contracts are renegotiated, services are brought in-house and energy consumption data collection is refined.

- Contracts

  As the District is responsible for reporting all greenhouse gas emissions produced through the delivery of traditional services, contracts with private service providers must be updated in the near future to allow the District to accurately gauge energy use associated with contracted services.

  - It is recommended that if the contract is up for renewal prior to 2012, that the contract update occur at the time of renewal.
  - If the contract renewal is in or beyond 2012, the contract should be amended no later than December 31, 2011.

- Electricity and Natural Gas

  Data for electricity and natural gas has been based on meter reading dates rather than actual usage dates. As a result there may be some energy usage overlap between calendar years due to the date in which the meters are read. By using the meter reading date, data collection will be consistent from one year to the next and will prevent double or missing data counts.

- Estimates

  Because of the limitations in data collection, this inventory will include estimates for contractor contributions to municipal emissions.

  The breakdown of inventoried emissions indicates that 33% of non solid waste collection emissions come from vehicle and equipment uses. Based on comparable municipal inventories, it is estimated that approximately 42% of non solid waste collection emissions are generated by vehicle and equipment uses. For consistency purposes, the 2010 estimate has been taken and applied to the 2008 and 2009 years.

  Therefore, all data includes an estimate of the unavailable data. For the purposes of the inventory, all additional emissions were assumed to be from vehicles and equipment operated by contractors providing Road and Traffic Operations services.

  As well, solid waste contract numbers were only available for 2010. To avoid the perception of a dramatic increase in emissions, the 2010 numbers were used for 2009 and 2008.

- Personal Vehicle Usage

  Some District staff members use personal vehicles while at work. Emissions from these vehicles must be included in the inventory. Staff mileage was converted to fuel consumption based on conversion factors provided by the Province of BC:

Vehicle and Fuel Type	L/km
Car/Taxi - Gasoline	0.103
Car/Taxi - Diesel	0.077
Truck/SUV - Gasoline	0.147
Truck/SUV - Diesel	0.125

3. Operational Emissions Summary

3.1 Inventory Summary

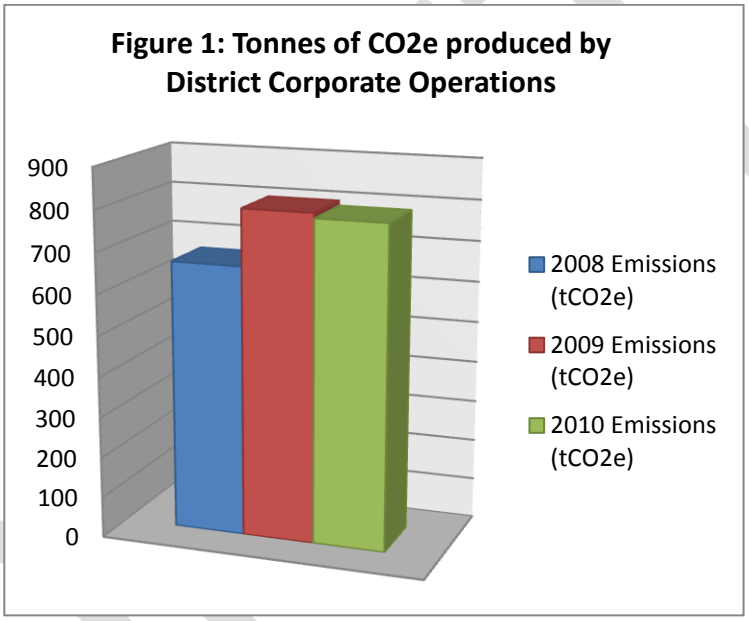
The Emissions Inventory includes all emissions relating to Traditional Services provided by the District of Lake Country. The report breaks these emissions into the 6 categories as required by the Climate Action Charter.

All emissions are reported in Tonnes of Carbon Dioxide equivalents (tCO_2e).

3.2 Corporate Summary

The delivery of traditional services by the District of Lake Country produced 664 tCO_2e in 2008, 801 tCO_2e in 2009 and 789 tCO_2e in 2010.

Figure 1: Tonnes of CO2e produced by District Corporate Operations



These figures represent all of the known and estimated emissions produced by traditional services. At the time of this report, these numbers do not represent a full accounting of District emissions. In the future it will be a requirement for contractors to report energy and fuel consumption resulting from service provision.

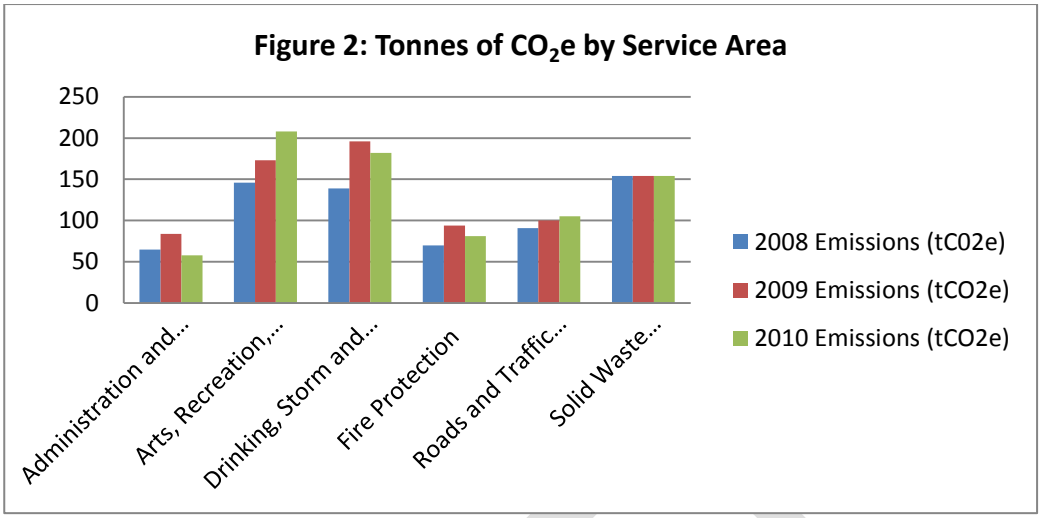


Figure 2: Tonnes of CO_2e by Service Area
250
200
150
100
50
0
Administration and...
Arts, Recreation,...
Drinking, Storm and...
Fire Protection
Roads and Traffic...
Solid Waste...
2008 Emissions (tC02e)
2009 Emissions (tCO2e)
2010 Emissions (tCO2e)

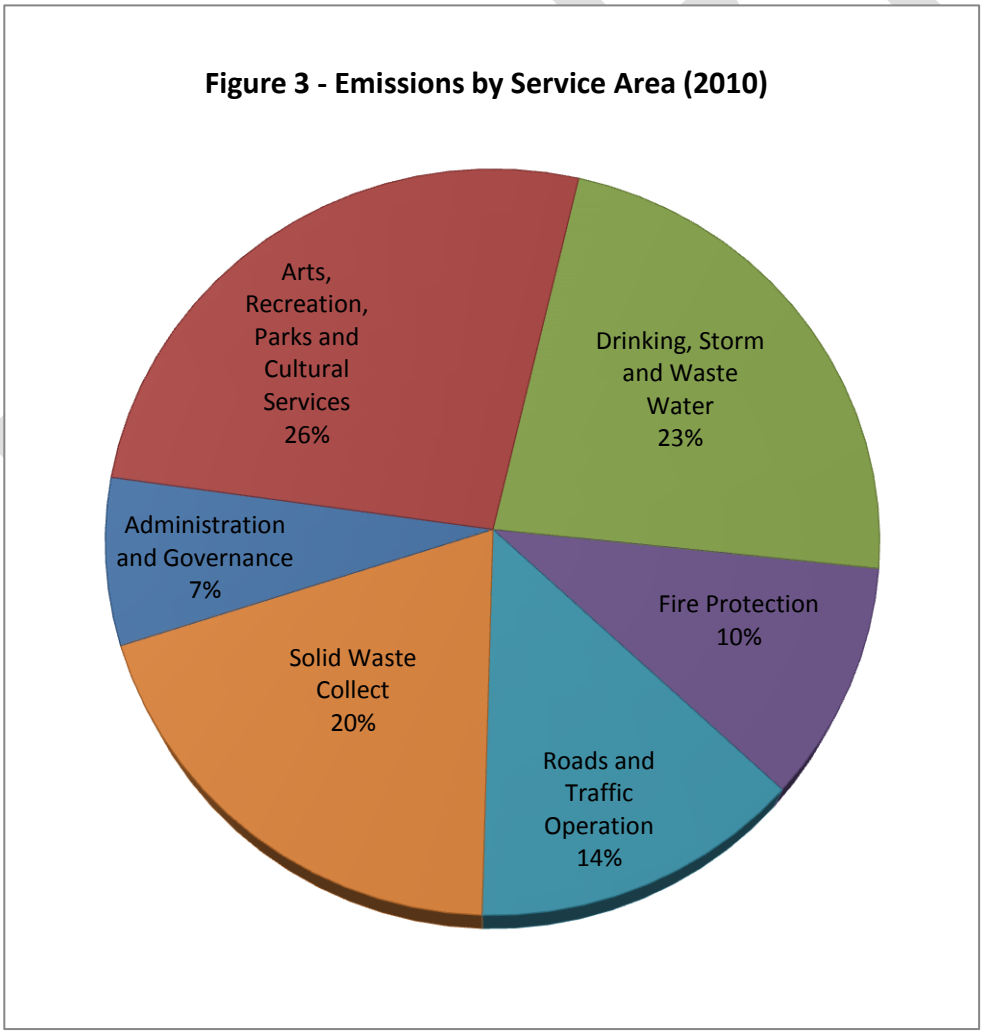


Figure 3 - Emissions by Service Area (2010)
Arts, Recreation, Parks and Cultural Services 26%
Drinking, Storm and Waste Water 23%
Administration and Governance 7%
Fire Protection 10%
Solid Waste Collect 20%
Roads and Traffic Operation 14%

4. Recommendations and Strategy

4.1 Principles of Reduction

No one document could detail and rank all potential reduction opportunities. Rather, this plan will establish guiding principles which the District may use to evaluate and consider future reduction opportunities.

The principles are based on District values as expressed in the District Strategic Plan, the District Official Community Plan and other Council documents.

1. The District will maintain current levels of service to the public.

   The easiest way for the District to reduce operational emissions would be to reduce the level of service provided to the public. However, the District will not support emissions reduction actions which reduce the quality of service being provided to the public.

2. The District will strike a balance between emissions reductions and offset purchases.

   While offset purchases will provide a means of technically achieving Carbon Neutrality, the District will work to reduce actual District emissions, rather than simply purchasing offsets.

3. The District will favour the most cost effective option.

   Cost efficiency will remain a paramount concern for the District in reducing Carbon emissions. The District will favour options which provide the greatest reduction per dollar spent.

4. The District will attempt to find reduction options that benefit the community in some way.

   When considering reduction options, the District will favour solutions which provide tangible benefits to the community, such as funding Green Communities Committee approved projects within the community.

These principles will be used to evaluate future decisions on potential reduction options. Using a principled based decision making model will allow the District to make decisions which best meet plan objectives.

4.2 Major Reduction Opportunities

In 2010, 51% of District emissions were generated by vehicles and equipment, while the remaining 49% were generated by buildings and structures owned by the District.

The largest single source of emissions directly attributable to District Operations was the Lake Country Arena, which generated approximately 154 tCO_2e of emissions, followed by the Lake Country Municipal hall, which generated approximately 43 tCO_2e of emissions.

Combined, those two sources accounted for almost one third of all District emissions. They are also emissions sources where efficiencies may be found which will not impact service levels provided to the community. As well, energy reductions in these structures will result in cost savings to the District.

Based on this, it is strongly recommended that the District make conducting energy audits on the Lake Country Arena and the District Municipal Hall as the highest priority actions to be undertaken as part of the move towards carbon neutrality.

Energy use reduction in District buildings will also provide additional cost savings to the District, as fewer financial resources will be allocated to purchasing electricity or natural gas.

Largest Direct District Emission Sources (2010)			
Emissions Source	Total Emissions (tCO_2e)	Annual cost to offset at $25 per tonne	Annual cost to offset at $100 per tonne
Lake Country Arena	154.2	$3,855	$15,420
Lake Country Municipal Hall	43.0	$1,075	$4,300
Okanagan Centre Pump Station	23.7	$590	$2,370
Winfield Fire Hall	18.6	$465	$1,860
Seniors Centre	15.9	$400	$1,590
Okanagan Centre Museum	13.5	$340	$1,350

The collection of Solid Waste generated 154 tCO_2e in 2010. These emissions are attributable to the District, and must be assessed as part of District emissions. However, because the service is contracted out, the District does not directly control the operations. To reduce this emissions source, the District will be required to work with other partners in the Central Okanagan to improve efficiency.

4.3 Reduction Opportunities

4.3.1 Administrative Reduction Opportunities

Administrative Reduction Opportunity	**Potential Cost**	**Potential Benefits**
Develop Climate Action contract specifications in RFP's and tendering documents	None (may lead to higher contract costs)	Moderate

Develop and Implement Sustainable Procurement Policy	None	Minimal
Develop and Implement Low Emissions Travel Policy	None	Minimal
Zero-Waste program for municipal operations	Moderate	Minimal
Introduce Low Carbon IT program	Moderate	Minimal
Develop and Implement Low Carbon Meeting Policy	Minimal	Minimal
Community Energy Coordinator, possibly as a shared service with other local governments in the region	Moderate	Unknown

4.3.2 Building and Structure Reduction Opportunities

Building and Structure Reduction Opportunity	**Potential Cost**	**Potential Benefits**
Energy Audit and Life Cycle Cost of all Municipal Facilities	Minimal	High
Install or Upgrade bus shelter lighting to solar power	Moderate	Minimal
Upgrade street and traffic lighting to energy efficient LED lights	Minimal	Minimal
Require all Municipal Buildings constructed or being renovated to use building construction techniques which help reduce energy consumption	High	High
Building retrofits to reduce operational costs and emissions	Moderate	High
Light Upgrades to replace older fluorescent lights	Minimal	Minimal
Upgrade or replace water and sewer system equipment with energy efficient equivalents	High	Moderate
Smart meters for all Municipal Buildings	Moderate	Minimal
Require water metering for all households connected to a District water supply within the municipality, to reduce the volume of water pumped by the District	High	Moderate

4.3.1 Alternative Energy Reduction Opportunities

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Reduction Opportunity	**Potential Cost**	**Potential Benefits**
Community energy study to assess District Energy opportunities.	Moderate	Moderate
Implement an Alternative Energy Project that benefits the District and demonstrates technology to community.	High	Moderate

4.3.2 Transportation Reduction Opportunities

Reduction Opportunity	Potential Cost	Potential Benefits
Participate in E3 Fleet program	Minimal	Moderate
Develop and Implement Green Fleet policies and procedures	Minimal	Moderate
Fleet Upgrades and Assignment	Moderate	Moderate
Review and Update bylaws and policies to ensure off-site servicing includes green transportation amenities	Minimal	Minimal

4.4 Emission Balancing Opportunities

Regardless of emissions reductions, the District will continue to emit some greenhouse gases. In order to achieve carbon neutrality, the District will be required to balance emissions through the purchase or creation of offsets or the purchase of carbon credits.

The province has identified three approaches to emissions balancing. The approaches are:

a. Investing in a Green Communities Committee supported GHG reduction project

b. Investing in an alternative GHG reduction project

c. Purchasing Emissions Offsets

4.4.1 Investing in a GCC Supported Project

The Green Communities Committee (GCC) is a Joint Provincial-UBCM committee established to assist local governments in achieving Carbon Neutrality.

The GCC will periodically identify projects within communities which will reduce greenhouse gas emissions. These projects will either reduce vehicle emissions, retrofit buildings to improve efficiency, expand solar thermal capacity, or provide household organic waste composting.

These projects would be private projects initiated by the private sector. However, through the GCC, the District would be given the opportunity to invest in these projects to reduce overall community emissions, and receive a credit towards corporate emissions.

For example, a private business could approach the GCC about retrofitting a private building to reduce emissions. The District could invest in this retrofit, and any reductions from this retrofit will be credited towards District.

The advantages of this approach are that the GCC will do the leg-work in terms of certifying and rating the project, with the only role of the District as being a cash provider. The money spent will also be spent in the community, which would enjoy any spin-off benefits or additional employment generated by the project. However, the District will still be required to undertake some reporting, and the projects may not be the most cost-effective. As well, there are no guarantees that such projects will be undertaken in the District.

4.4.2 Investing in an Alternative GHG Reduction Project

The District may also choose to invest or undertake a non GCC supported project. These projects could be any which the District considers worthwhile, subject to an extensive list of eligibility requirements.

This option would retain the maximum flexibility for the District in terms of ensuring that benefits and jobs accrue within the community. However, the reporting requirements for these projects would be extensive. Considerable staff time would need to be allocated towards tracking, calculating and auditing these projects. The audits would also require that the District contract a professional engineer and a professional accountant.

The District Hydroelectric Facility can be counted as an Option 2 offset project. In order to claim these offsets, which would be worth approximately $2,000, the District will be required to audit the facility in accordance with GCC requirements.

Given the extensive reporting requirements, the second option would simply not be cost effective for the District. The cost of the additional staff and professionals would far outstrip the cost of simply purchasing offsets as discussed below. However, in instances where the project provides additional benefits to the community or to the organization, such as the hydro-electric facility, offsets should be explored.

4.4.3 Purchasing Emission Offsets

A carbon offset represents a reduction greenhouse gas emissions generated by activities, such as improved energy efficiency, that can be used to balance the emissions from another source.

Currently carbon offsets are available for purchase through difference agencies and businesses. In British Columbia, the provincial government has set up a BC Crown corporation, the Pacific Carbon Trust, with a mandate and commitment to deliver real and permanent greenhouse gas reductions.

The Pacific Carbon Trust both purchases and sells local BC produced offsets that adhere to the Ministry of Environment's Emission Offsets Regulation. The Pacific Carbon Trust currently charges $25.00 per tonne of CO_2e offset. This number is subject to change.

Additional information on the Pacific Carbon Trust may be found at:

http://www.pacificcarbontrust.com/

The District may also opt to purchase carbon offsets from other market sources. These sources vary dramatically both in cost of offsets and in the level of oversight for projects undertaken. Prior to purchasing offsets, it is recommended that District staff and council work to determine the provider that meets the District's needs.

Purchasing Carbon Offsets is the most cost-effective and efficient means for the District to balance its emissions and achieve carbon neutrality. It is unlikely that a community the size of Lake Country will ever have sufficient GCC approved projects to allow the District to balance corporate emissions, and the District currently lacks the staff and financial resources to undertake sufficient projects to balance corporate emissions.

Offset purchases are a simple and cost effective solution to allow the District to achieve corporate carbon neutrality.

5. Financial Impacts

5.1 Budget

Should the District continue to emit greenhouse gases at the 2010 level, then based on current offset pricing, $19,725 worth of CO_2 offsets will be required through the Pacific Carbon Trust. If the District is able to undertake an audit of the Hydroelectric Facility and receive GCC approval, then the amount of offsets required to purchase will decline to $17,725. The Hydroelectric Facility is an Ecologo certified project. While the GCC does not currently recognize third party certification like Ecologo, the District will continue to lobby to have the certification recognized.

5.2 Internal Funding

5.2.1 Climate Action Reserve Fund

To help ensure that the Municipality has adequate funding to balance emissions the District of Lake Country established a Climate Action Reserve Fund on February 2, 2010 through the adoption of Bylaw 734, 2009.

The Climate Action Reserve Fund Bylaw creates a dedicated source of funding for:

a. *Capital expenditures for District buildings, infrastructure and fleet to increase energy efficiency, reduce greenhouse gas emissions or improve sustainability;*

b. *Principal and interest or redemption of debenture related to (a);*

c. *Plans or programs to promote, study or implement greenhouse gas emission reduction strategies on a community and corporate basis.*

The Climate Action Reserve Fund Bylaw will provide resources for future reduction opportunities.

6. Implementation

6.1 Monitoring and Reporting

The District of Lake Country will monitor corporate carbon emissions on an annual basis. This GHG emission monitoring program will enable the District to assess progress made on carbon reduction activities that have been identified as priority opportunities. The monitoring program shall consist of a brief annual update and an in-depth five-year update.

In addition to the internal monitoring and reporting process described above, the District is also required to report to the Provincial Government as part of the Climate Action Charter obligations. This report will need to be completed on a yearly basis beginning in 2012, and must include:

- Corporate carbon emissions produced;
- Progress made in becoming carbon neutral; and
- Information on how carbon neutrality was achieved for the previous fiscal year.

To minimize staff time requirements, the District will as much as possible combine the reporting process with the reporting process required for the provincial Climate Action Revenue Incentive Program (CARIP), which has similar though not identical requirements.

6.2 First Steps

The first step of the plan will be to have Council consider reduction targets for the next 5 years. It is recommended that the targets be feasible and achievable, in the 5% per year range.

Small programs should be implemented early to begin cutting emissions and costs. Two simple policies which can be implemented quickly and easily would include a Low Emissions Travel Policy and a Sustainable Procurement Policy.

Low Emissions Travel Policy

The District Travel and Expense Policy 06.03.075 does not currently encourage low emissions travel by District Staff. The policy does not encourage car pooling by District Staff going to the same conference, and does not discourage the taking of multiple vehicles to these events. Amendments to the policy could be used to either reward staff members who car pool, or not reimburse mileage multiple times for travel to a single conference.

Sustainable Procurement Policy

Sustainable procurement or purchasing is based on evaluating products with an eye towards energy use and emissions reduction. This approach will ensure that energy efficient and green technologies are given a fair evaluation against more traditional approaches.

Staff will also obtain the results of energy audits on major District structures and cost out building retrofits. Building retrofits will only be suggested to council if they are cost effective with reasonable pay-backs.

6.3 Long Term Carbon Neutrality

The biggest component to District carbon neutrality will be achieved by emissions balancing. The District will be required to purchase offsets for the majority of emissions generated by District operations. This is unavoidable.

At this time, any Climate Action Reserve funding above and beyond what is required to purchase offsets should be directed into opportunities to reduce corporate emissions, rather than invested in projects to balance emissions.

Based on the results of the emissions inventory, the most dramatic and cost effective emissions reductions opportunities will be found in improving building efficiency, specifically at the arena and municipal hall.

Because of the relatively minimal cost of purchasing offsets, the District should only consider investing in low emissions vehicles when reduced operating costs justify their purchase. Should the reduction in operating costs alone not justify the purchase, then traditional vehicles or equipment should continue to be purchased, and the costs saved invested elsewhere.

Appendix A – Emissions Inventory Summary

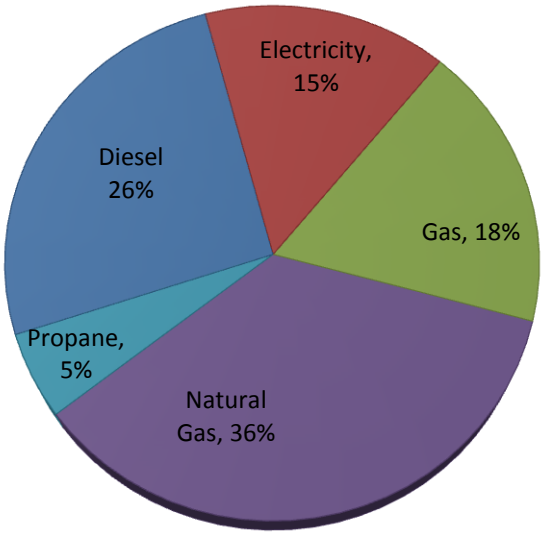
	2008			2009			2010		
Service Area	Buildings and Structures (in tCO_2e)	Vehicles and Equipment (in tCO_2e)	Total (in tCO_2e)	Buildings and Structures (in tCO_2e)	Vehicles and Equipment (in tCO_2e)	Total (in tCO_2e)	Buildings and Structures (in tCO_2e)	Vehicles and Equipment (in tCO_2e)	Total (in tCO_2e)
Administration and Governance	51	14	65	64	19	83	42	15	57
Drinking, Storm and Waste Water	89	50	139	99	97	196	109	72	181
Road and Traffic Operations	4	87	9	6	94	100	8	98	106
Arts, Recreation, Parks and Cultural Services	138	8	146	159	14	173	189	19	208
Fire Protection	37	32	69	44	50	94	37	44	81
Solid Waste	0	154	154	0	154	154	0	154	154
Total	319	345	664	372	428	801	385	402	789

Appendix B – Emissions Inventory Detail

Emissions by Fuel Type

The largest source of District emissions comes from the combustion of Natural Gas, which contributed 247.5 tCO_2e in 2010. Diesel fuel was the second greatest source, followed by Gas, Electricity, Propane and Diesel.

Figure 4 - Emissions by Fuel Type (2010)



Service Area: Administration and Governance

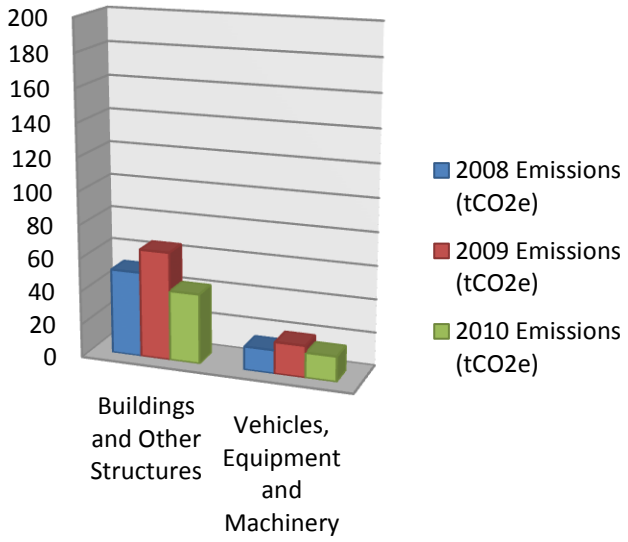
The Administration and Governance service area includes buildings and activities associated with administration, governance, planning and economic development of a municipality. This includes energy used for:

- Administration buildings,
- Fuel consumption relating to Administrative functions

The Administration and Governance service area created 65 tCO_2e in 2008, 83 tCO_2e in 2009 and 57 tCO_2e in 2010. The majority of the CO_2e produced is a result of heating and lighting for the municipal hall.

The amount of CO_2e produced by vehicles for this service area is mainly a result of private vehicle usage for municipal purposes with a smaller amount of emissions resulting from municipal owned vehicles that are used for engineering purposes.

Figure 5: Tonnes of CO_2e produced by the Administration and Governance Service Area



The steep decline between 2009 and 2010 appears largely attributable to heating costs for the municipal hall during the winter. The cold 2009 winter generated a considerable uptick in natural gas use.

In addition, the information reported above does not included energy related to contracted services for administration or governance. This information will be added to the inventory in future years when contractors will be required to report energy and fuel usage data to the District.

Service Area: Drinking, Storm and Waste Water

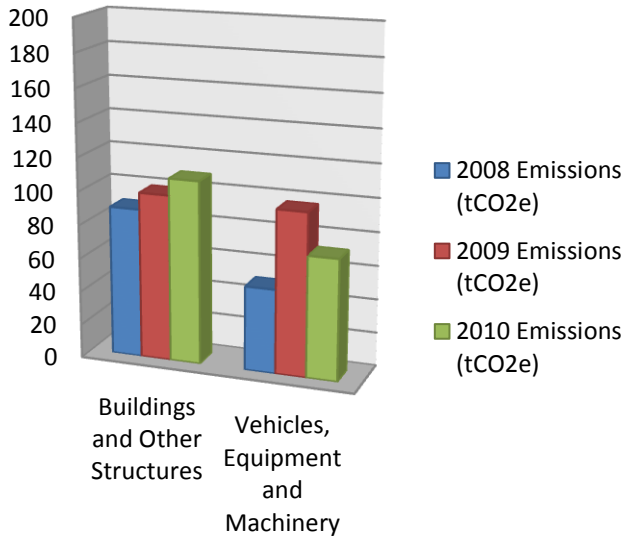
Energy consumption data related to the operation and maintenance of drinking, storm, and waste water is tabulated in this service area. This includes energy used for:

- Public works buildings,
- Water intakes, wells, reservoirs and dams,
- Water treatment facilities,
- Water distribution systems,
- Wastewater collection systems,
- Wastewater treatment systems,
- Stormwater collection and treatment, and
- Vehicles, equipment and machinery related to the above functions.

In 2008, the Drinking, Storm and Waste Water service area produced 139 tCO_2e. In 2009, the Drinking, Storm and Waste Water service area created 196 tCO_2e, and in 2010, it produced 181 tCO_2e.

The increase in emissions between 2008 and 2009 is the result of new equipment coming on line and an increase in the use of vehicles to provide services. In 2010, there was a decrease in vehicle use, but a sharp

Figure 6: Tonnes of CO_2e Produced by the Drinking, Storm and Waste Water Service Area



uptick of energy use at the wastewater treatment plant as capacity increased.

The information reported for all years are underestimated as they do not included energy and fuel usage by most contracted services. This additional information will be added to the inventory in future years when contractors will be required to report energy and fuel usage data to the District.

Service Area: Solid Waste Collection, Transportation and Diversion

This service area includes energy consumption related to the collection, transportation and diversion of garbage, recyclables and composting. This service area includes energy used for:

- Heavy machinery, dump trucks, garbage, recycling and compost collecting vehicles, compactors, chippers, crushers,
- Transfer stations,
- Recycling storage facilities,
- Buildings at yard and garden waste stations, and
- Buildings used to house vehicles and staff associated with solid waste collection transportation and diversion,

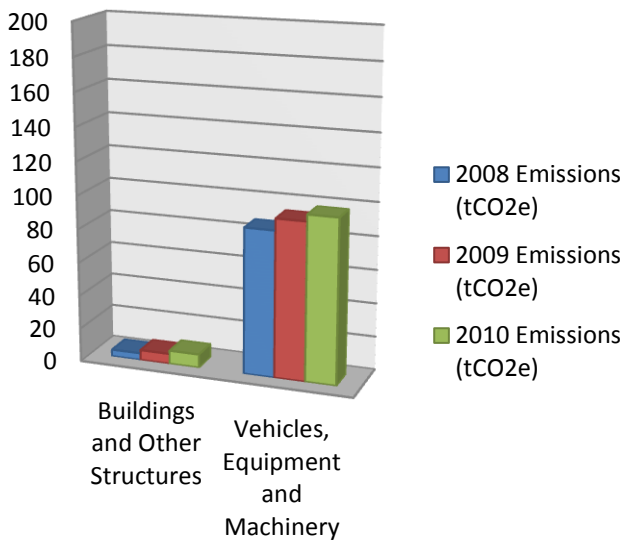
The District of Lake Country solid waste collection, transportation and diversion services are currently being accommodated through a contract with O.K. Environmental Waste Systems Ltd. Data is not currently available from O.K. Environmental Waste Systems Ltd. but has been requested at the September 2010 Solid Waste Technical Committee Meeting. When the contract information becomes available, it will be added into the District's carbon emissions inventory.

Service Area: Roads and Traffic Operations

This service area depicts energy consumption data related to the operation and maintenance of roads and traffic processes within the Municipality. Specifically, energy related to the operation and maintenance of the following has been included in this group:

- Roads, bike lanes, trails, and sidewalks,
- Street lights and signals,
- Parking lots,
- Vehicles used for road and traffic functions, and
- Buildings and structures used to house equipment, vehicles and staff associated with road and traffic functions.

Figure 7: Tonnes of CO2e Produced by the Roads and Traffic Operations Service Area



Estimates have been included for the Vehicles, Equipment and Machinery provided by Contractors. It is estimated that these services generate an additional 86 tCO_2e beyond that which was inventoried.

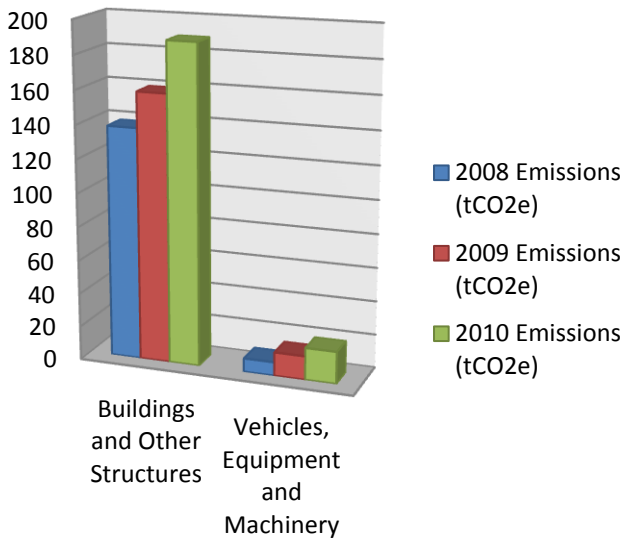
The inventory will be updated as this data becomes available in future years.

Service Area: Arts, Recreation, Parks and Cultural Services

The Arts, Recreation, Parks and Cultural Services category includes energy consumption for the operation and maintenance of following services:

- Parks,
- Recreation centres and arenas,
- District owned art galleries and museums,
- District operated cemeteries,
- Libraries and public theatres,
- Vehicles and equipment associated with this service area and
- Buildings and structures used to house equipment, vehicles and staff.

Figure 8: Tonnes of CO_2e Produced by the Arts, Recreation, Parks and Cultural Services Area



This service area produced 146 tCO_2e in 2008, 173 tCO_2e in 2009 and 208 tCO_2e in 2010. The increase between 2008 and 2009 is attributable to an increase in energy usage at the Winfield Arena and the Okanagan Centre Museum. While heating costs dropped in 2010, the new Spray Park came online, which drove up energy use.

This service area includes contracted services for the library and Creekside Theatre. The energy usage by these services has not yet been included in the inventory as these are shared facilities and the distribution of energy usage must be allocated between the users. Once these numbers have been obtained, they will be included in the inventory.

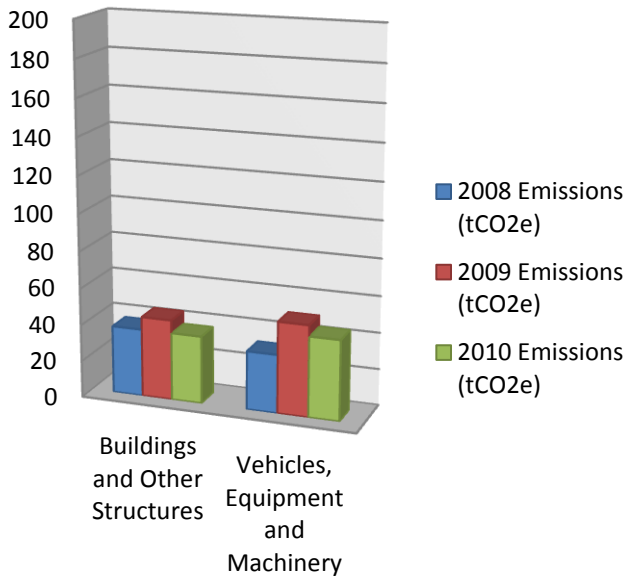
Service Area: Fire Protection

Energy consumption data has been collected and converted into carbon dioxide equivalents for all fire protection services performed by the District or on behalf of the District. These services include activities related to full-time and paid on call fire services related to:

- Fire suppression activities
- Inspection activities,
- Fire education and outreach,
- Buildings and structures used to house vehicles, equipment and staff, and
- Vehicles and machinery used for fire protection services.

The Fire Protection Service Area emitted 70 tCO_2e in 2008, 90 tCO_2e in 2009 and 81 tCO_2e in 2010.

Figure 9: Tonnes of CO_2e Produced by the Fire Protection Service Area



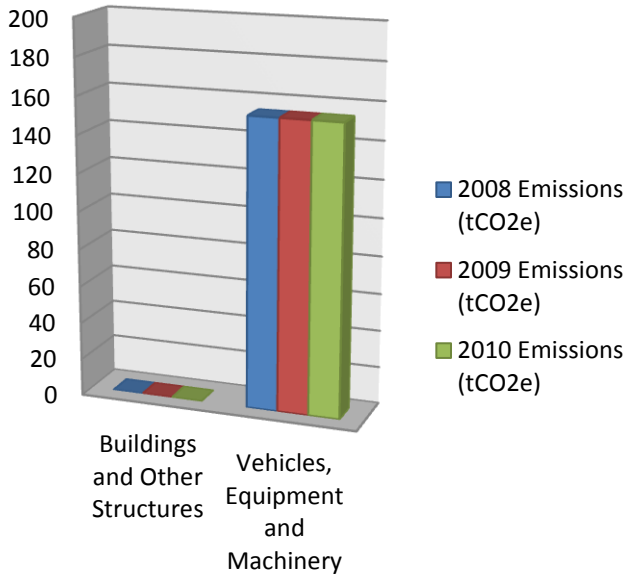
Service Area: Fire Protection

Energy consumption data has been collected and converted into carbon dioxide equivalents for all solid waste collection services provided by the Central Okanagan Regional District on a contract basis. At this time, the only emissions tabulated are vehicle emissions from collection vehicles.

Data was only available for 2010 and a small portion of 2009. In order to avoid the appearance of a dramatic increase in emissions, for the purposes of this inventory, the 2010 emissions were used for the unknown portions of 2009 and 2010.

In 2010, the solid waste Service Area emitted 154 tCO_2e.

Figure 10: Tonnes of CO_2e Produced by the Solid Waste Service Area



Appendix C – Project Review Worksheet

The District of Lake Country Carbon Neutral Operations Plan establishes a series of principles to guide decision-makers in reviewing potential projects or spending decisions aimed at reducing emissions. The following worksheet may be used as a tool to review options in the context of the Carbon Neutral Operations Plan.

Project Description:_____

Does the proposal maintain or improve the level of service provided to the public?

Does the proposal reduce actual carbon emissions, rather than offsetting or displacing emissions?

Does the proposal maximize emissions reductions per dollar spent?

Does the proposal have the potential to benefit the community at large?