




PO Box 1749
Halifax, Nova Scotia
B3J 3A5, Canada

Item No. 1
Halifax Regional Council
August 3, 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: Original signed

Councillor Sue Uteck, Chair
Energy and Underground Services Advisory Committee

DATE: July 16, 2010

SUBJECT: HRM Corporate Greenhouse Gas Emissions Inventory 2008

INFORMATION REPORT

ORIGIN

June 18, 2010 Energy and Underground Services Advisory Committee meeting.

BACKGROUND/DISCUSSION

At the June 18, 2010 meeting of the Energy and Underground Services Advisory Committee, staff presented a report on the HRM Corporate Greenhouse Gas Emissions Inventory 2008. Subsequently, the Committee passed motion to forward the document to Regional Council for information.

The attached staff report provides further background information and the inventory document.

BUDGET IMPLICATIONS

None associated with this report.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Project and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Project and Operating reserves, as well as any relevant legislation.

COMMUNITY ENGAGEMENT

Community Engagement is not applicable with this report.

ATTACHMENTS

Attachment 'A': Staff report dated May 18, 2010.

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Sheilagh Edmonds, Legislative Assistant



PO Box 1749
Halifax, Nova Scotia
B3J 3A5 Canada

**Energy and Underground Services Committee
June 18, 2010**

TO: Chair and Members of Energy and Underground Services Committee

Original signed

SUBMITTED BY: _____
Phillip Townsend, Director, Infrastructure and Asset Management

DATE: May 18, 2010

SUBJECT: HRM Corporate Greenhouse Gas Emissions Inventory 2008

ORIGIN

This report originates from Staff.

RECOMMENDATION

It is recommended that the Energy and Underground Services Committee accept the HRM Corporate Greenhouse Gas Emissions Inventory 2008, Attachment One, as prepared by the Sustainable Environment Management Office, and forward to Regional Council as an Information Report.

BACKGROUND

This report is part of HRM's greenhouse gas emissions reduction initiative, ongoing since 1997. As outlined in the Update on HRM Greenhouse Gas Emissions Initiatives Community Council Report, April 16, 2010, HRM is working towards achieving the fifth and final milestone in its corporate GHG reduction commitment through the Federation of Canadian Municipalities' Partners for Climate Protection program. HRM needed to re-calculate its corporate GHG emissions inventory in order to measure progress and consider future actions.

DISCUSSION

The 2008 corporate GHG inventory will provide a new baseline for HRM's reduction efforts moving forward. Emissions will now be estimated each year, in a similar fashion, in accordance with accepted protocols (the ICLEI 2009 International Local Government GHG Emissions Analysis Protocol was used for the 2008 inventory).

HRM has had many successes in energy efficiency projects resulting in significant energy savings, and will continue to work on these in the future. Work also needs to be done at the community level to move HRM through the five-milestone process of the PCP program for its community reductions.

BUDGET IMPLICATIONS

There are no budget implications of this report.

FINANCIAL MANAGEMENT POLICIES / BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Project and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Project and Operating reserves, as well as any relevant legislation.

COMMUNITY ENGAGEMENT

Community engagement was not deemed to be necessary in this process because updating the inventory is a prescriptive objective quantitative task. The data will inform the update of the Greenhouse Gas Emissions Reduction Local Action plan which will involve engagement strategies.

ALTERNATIVES

There are no recommended alternatives.

ATTACHMENTS

- HRM Corporate Greenhouse Gas Emissions Inventory 2008

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/cc.html> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by : Shannon Miedema, Environment Performance Officer, 490-3665

Original signed

Report Approved by: Richard MacLellan, Manager, SEMO, 490-6056

HRM CORPORATE GREENHOUSE GAS EMISSIONS INVENTORY 2008

May 2010

Prepared by:

Shannon Miedema, Environmental Performance Officer

Sustainable Environment Management Office

Infrastructure & Asset Management

Halifax Regional Municipality

www.halifax.ca/environment/sem0



EXECUTIVE SUMMARY

HRM is committed to reducing greenhouse gas emissions in order to decrease its overall impact on the climate. This report details HRM's corporate greenhouse gas (GHG) emissions inventory for fiscal year 2008. HRM measured its corporate and community emissions in 2004/2005, using data from fiscal year 2002. As a result of the 2002 estimates, HRM Regional Council approved a Local Action Plan for reducing corporate GHGs, as well as a corporate emissions reduction target of 20% below 2002 levels by 2012.

Total corporate emissions for 2008 were estimated to be 115,564 tonnes of equivalent carbon dioxide emissions. The 2002 inventory estimated 121,352 tonnes. However, the 2002 and 2008 inventories cannot technically be compared due to several developments since 2002, including corporate changes within HRM and significant differences in data quality and availability. Despite the problems with comparability, based on the 2008 inventory results, HRM will not meet its 2012 reduction target. However, HRM has completed many successful energy efficiency projects and actions in order to reduce overall GHG emissions at the corporate level, particularly in the buildings sector, the number one corporate source of GHG emissions. HRM is committed to an ongoing effort of GHG emissions monitoring and reduction, and anticipates setting new targets for 2020 and 2050 that are in line with provincial and national goals.

HRM plans to revise its Local Action Plan to include new measures for reductions, and to re-estimate its corporate emissions inventory on an annual basis. Future inventory estimates will be comparable to the 2008 estimate, allowing HRM to track its progress more effectively moving forwards. HRM plans to begin an estimation of community-wide emissions in the near future, and to begin working with the larger community towards absolute reductions in GHG emissions in the municipality.

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1. BACKGROUND

Halifax Regional Municipality (HRM) joined the Partners for Climate Protection (PCP) program in 1997, and committed to taking action against climate change. The PCP is led by the Federation of Canadian Municipalities (FCM) and ICLEI-Local Governments for Sustainability. The PCP is a network of more than 200 Canadian municipal governments committed to reducing greenhouse gas (GHG) emissions in their corporate operations and in their communities. Further information on the PCP program is available on the FCM website through the following link: <http://gmf.fcm.ca/Partners-for-Climate-Protection/>.

In 2004, ICLEI Energy Services (ICLEI) was hired to measure HRM's corporate and community GHG emissions to provide a baseline and suggest a reduction target. Data from 1997 and 2002 fiscal years were used for this estimate, and the suggested target was to reduce GHG emissions by 20% below 1997 levels by 2012 (ICLEI 2005). HRM decided to focus on corporate emissions first, in order to clean up its own house and lead by example. However, a community emissions inventory for 2008 will be conducted and a target will be set once the corporate emissions, inventory system and targets are advanced. Once the community inventory is re-measured and a system for ongoing measurement is in place, HRM's Community Energy Plan will be revised and actions will be taken to reduce community GHGs.

In 2005, HRM hired Dillon Consulting to write a Corporate Greenhouse Gas Emissions Reduction Local Action Plan (Dillon 2005). HRM Regional Council approved the Local Action Plan (LAP), along with a revised corporate GHG emissions reduction target of 20% below 2002 levels by 2012.

2. INTRODUCTION

This report has been prepared in order to evaluate HRM's progress on its corporate GHG emissions reductions since setting a reduction target in 2005. It is important to understand the status of HRM's emissions in order to measure the success of its efforts based on the LAP.

This report is also required as part of the PCP program requirements for achieving the fifth and final milestone. The milestones in the PCP program are as follows:

- ✓ Milestone 1: Create a GHG Emissions Inventory and Forecast
- ✓ Milestone 2: Set a Reduction Target
- ✓ Milestone 3: Develop a Local Action Plan
- ✓ Milestone 4: Implement the Local Action Plan
- Milestone 5: Measure Progress and Report Results

In order to complete Milestone 5, HRM must assess its progress and submit a report to the PCP program for approval. HRM must demonstrate that it took actions to reduce GHG emissions, and that these actions resulted in real reductions.

HRM is committed to an ongoing effort of GHG emissions monitoring, and anticipates setting new targets for 2020 and 2050 that are in line with provincial and national goals. The *NS Environmental Goals and Sustainable Prosperity Act* (EGSPA) states that GHG emissions will be at least 10% below 1990 levels by 2020. The federal government has committed to reducing GHG levels by 20% from 2006 levels by 2020. Canada's long-term goal is to reduce emissions by 60 to 70% from 2006 levels by 2050.

3. METHODS

Since the 2002 inventory, ICLEI has released a new protocol for emissions analysis titled, International Local Government GHG Emissions Analysis Protocol (IEAP) (ICLEI 2009). This protocol differs somewhat from the previous protocol that was used in measuring HRM's corporate emissions in 2004. Furthermore, HRM has seen some significant organizational changes since 2002. Namely, the responsibility for stormwater and wastewater management has shifted from HRM to Halifax Water. Therefore, some sources of GHG emissions that were previously considered as corporate emissions are now considered community-wide emissions.

3.1 Measured GHGs

GHG emission inventories are estimated in tonnes of equivalent carbon dioxide (eCO₂). The six major GHGs that contribute to climate change are:

- carbon dioxide (CO₂)
- methane (CH₄)
- nitrous oxide (N₂O)
- perfluorocarbons (PFCs)
- hydrofluorocarbons (HFCs), and
- sulphur hexafluoride (SF₆)

In most cases, the emissions from CO₂, CH₄ and N₂O from fossil fuel combustions, electricity generation, waste disposal and wastewater are the most significant sources of GHG emissions in community and government operations inventories. Therefore, HRM's 2008 inventory calculates CO₂, CH₄ and N₂O emissions.

3.2 Scopes of Emissions

The ICLEI 2009 Protocol (herein referred to as the IEAP) categorizes government operations emissions into three different scopes. Scope 1 emissions are direct emissions sources owned or operated by the local government. A municipal vehicle powered by gasoline is an example of a Scope 1 emission. Scope 2 emissions are indirect emission sources limited to electricity, district heating, steam and cooling consumption. Purchased electricity used by the local government is an example of a Scope 2 emission. It is associated with the generation of greenhouse gas emissions at a power plant. Scope 3 emissions are all other indirect and embodied emissions over which the local government exerts significant control or influence, such as emissions resulting from contracted waste hauling services.

The IEAP requires local government to report Scope 1 and 2 emissions. Scope 3 emissions are optional. HRM's 2008 corporate inventory includes Scope 1 and 2 emissions.

3.3 Emissions Calculations

Energy consumed (e.g. litres (L) of fuel or kilowatt-hours (kWh) of electricity) is the relevant measure of energy use for the inventory. These measures are used in conjunction with emission factors to determine emissions, using the following general equation:

$$\text{Fuel consumed} \times \text{emission factor} = \text{emissions}$$

Emissions must be converted into eCO₂ so that all energy can be compared under a common unit of analysis. Different gases have different warming potentials, which are accounted for in the calculations. Emission factors, or coefficients, are specific to each individual energy source and measured in tonnes of GHG/unit of fuel. These numbers are published in the National Inventory Report by Environment Canada, 2008. The 2008 electricity coefficient for Nova Scotia is 0.790 kg/kWh.

Sample Calculation:

An HRM fleet passenger car burns 1860.8 L of diesel fuel in fiscal year 2008. To calculate the vehicle's annual eCO₂ emissions:

$$\begin{aligned} \text{eCO}_2 &= (1860.8 \times \text{emission coefficient for CO}_2) + (1860.8 \times \text{emission coefficient for N}_2\text{O}) + (1860.8 \times \\ &\quad \text{emission coefficient for CH}_4) \\ &= (1860.8 \times 0.00273) + (1860.8 \times 0.0000004) + (1860.8 \times 0.0000002) \\ &= 4 \text{ tonnes} \end{aligned}$$

3.4 Tiers of Data

The IEAP defines three tiers of data, based on the level of methodological complexity. Inventory reports must explicitly state the tier used for collecting each type of data in the analysis. Tier 1 is the basic method, often using country-level defaults recommended by the Intergovernmental Panel on Climate Change (IPCC). Tiers 2 and 3 are much more demanding in terms of complexity and data requirements, and are considered to be more accurate while requiring higher levels of effort.

Tier 1: A tier 1 emission estimate is the result of the use of any of the following for an emission source:

- a default emission factor (provided by the IPCC);
- national average fuel use per capita;
- national average solid waste generation per employee, and
- methane recovery system effectiveness estimates based on the assumption that the system meets regulatory guidelines.

Tier 1 is only to be used in cases where more accurate data is unavailable.

Tier 2: Tier 2 estimates require an intermediate level of complexity and locally specific data. Generally the use of a Tier 2 approach requires:

- a country-specific emission factor;
- engineering estimates of energy used based on system use and design;
- estimates of heating fuel use based on known historical use modified for population changes and variations in annual temperatures (heating degree days);
- fuel use estimated from distance traveled times average fuel efficiencies;
- methane recovery system effectiveness estimates based on system design;
- total community distance travelled estimates based on systematic traffic counts and road segment lengths, and
- quantity of fuel used in a year based on known price paid times average fuel cost in that year.

Tier 3: Tier 3 estimates are the most complex and require the most specific data. A Tier 3 approach considers the following variables:

- type of fuel combusted;
- combustion technology;
- operating conditions;
- control technology;
- quality of maintenance;
- age of the equipment used to burn the fuel;
- metered energy use;
- metered methane recovery, and
- quantity of solid waste as weighed at a transfer station.

HRM's 2008 inventory incorporates Tier 2 and 3 estimates.

3.5 Data Types & Sources

Data collection involved the engagement and collaboration of multiple HRM Business Units as well as service providers. The Sustainable Environment Management Office (SEMO) acknowledges these efforts with thanks.

Data for the 2008 HRM Corporate GHG Emissions Inventory was drawn from several sources, as listed in Table 3-1.

Table 3-1: Data Sources

SECTOR	TYPE OF DATA	SOURCE	SCOPE	TIER
Buildings (includes emergency generators)	Power	<ul style="list-style-type: none"> • NSPI (power utility) • Estimates 	2	2 & 3
	Furnace Oil	<ul style="list-style-type: none"> • Invoices through SAP (HRM's accounting program) • Estimates 	1	2 & 3
	Natural Gas	<ul style="list-style-type: none"> • Heritage Gas 	1	2
	Diesel	<ul style="list-style-type: none"> • SAP 		
Lighting (includes street, traffic, park, sports fields lights)	Power	<ul style="list-style-type: none"> • NSPI 	2	2 & 3
Fleet (includes transit)	Gasoline	<ul style="list-style-type: none"> • SAP 	1	3
	Diesel	<ul style="list-style-type: none"> • SAP 	1	3

3.6 Assumptions

Some assumptions had to be made during the process of creating HRM's 2008 Corporate GHG Emissions Inventory. The most complex category for HRM corporate emissions is the building sector. HRM owns more than 200 buildings, but leases some of these buildings to community groups or private companies. Therefore, HRM does not receive regular invoices in order to track fuel and power consumption in these buildings. Data were available for the larger of these buildings, such as the Metro Centre, Dartmouth Sportsplex, and other large recreation centres and arenas, through a benchmarking initiative that HRM Infrastructure and Asset Management has been implementing for several years. HRM also leases space in some buildings, and therefore must calculate a percentage used of total power and fuel throughout a fiscal year.

When fuel and power data were not readily available, assumptions were made in order to calculate estimated amounts, and are noted in the spreadsheets in Appendix B.

A relatively small number of HRM buildings have not been captured in this analysis. These primarily consist of park washrooms and some small community centres. Upon completion of the 2008 corporate inventory, HRM plans to implement a process for continued monitoring and analysis of its annual GHG emissions. It is hoped that as efforts continue, all buildings will be more easily accounted for. It is anticipated that HRM will seek permission from operators of leased HRM buildings to allow service providers of fuel and power to share annual consumption figures with HRM for calculation and tracking purposes.

4. INVENTORY RESULTS

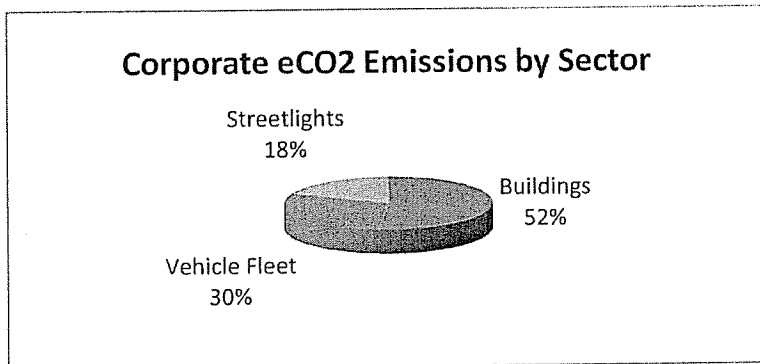
4.1 Inventory Summary

Total corporate emissions for 2008 were estimated to be 115,564 tonnes eCO₂. Table 4-1 shows the breakdown of emissions by sector. Figure 4-1 displays this breakdown by percentage.

Table 4-1: Emissions by Sector

Sector	Total eCO ₂ (t)
Buildings	59,620
Vehicle Fleet	34,538
Streetlights	21,407
Total	115,564

Figure 4-1: Emissions by Sector

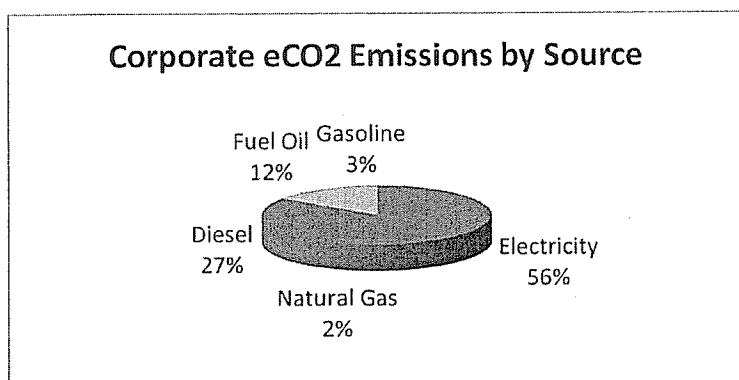


As seen in the above table and figure, HRM buildings are the largest source of corporate emissions, followed by fleet and then streetlights. Table 4-2 shows the breakdown of HRM emissions by source. Figure 4-2 displays this breakdown by percentage.

Table 4-2: Emissions by Source

Energy Type	Total Use	Total eCO ₂ (t)
Electricity	81,335,923	64,255
Natural Gas	1,513,155	2,861
CNG	0	0
Diesel	11,265,512	30,762
District Energy	0	0
Ethanol Blend	0	0
Fuel Oil	4,874,644	13,795
Gasoline	1,647,232	3,891
Propane	0	0
Total		115,564

Figure 4-2: Emissions by Source



As seen in the above table and figure, electricity represents the largest source of corporate GHG emissions. This is partly because HRM uses a substantial amount of electricity in both its buildings and lighting sectors, but also because electricity generation in Nova Scotia is primarily derived from coal, leading to higher GHG emissions than if it were generated by other sources.

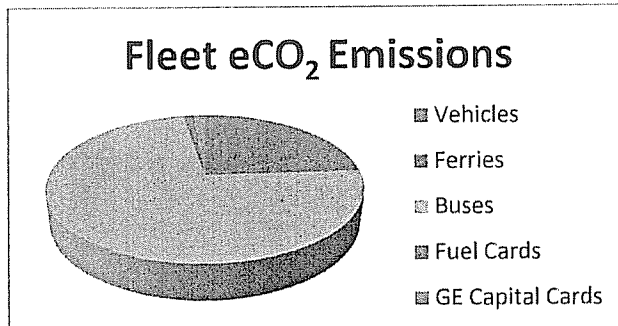
The large use of diesel can be attributed to HRM’s transit vehicles, both buses and passenger ferries. Natural gas can be expected to increase as a heating source for buildings in the years to come, as its availability expands throughout HRM. This will decrease overall emissions from heating, as natural gas results in fewer emissions than fuel oil or electricity.

4.2 Fleet

Fuel consumption per fleet vehicle is tracked in HRM’s accounting system, SAP. Table 4-3 displays fuel consumption by fleet type, with totals in litres as well as eCO₂. Total eCO₂ emissions from HRM fleet, including transit, are 34,538 tonnes. Figure 4-3 illustrates the breakdown of fleet emissions by category. The detailed GHG calculations by vehicle can be viewed in the spreadsheets attached as Appendix A.

Table 4-3: Fleet Fuel Consumption

TYPE	DIESEL	GAS
Vehicles	1,245,067	1,435,364
Ferries	564,557	--
Buses	9,266,634	--
Fuel Cards	55,341	138,699
GE Capital Cards	91,964	73,168
TOTAL (L)	11,223,563	1,647,232
TOTAL eCO₂ (t)	30,647	3,891

Figure 4-3: Fleet eCO₂ Emissions

As evident in Figure 4-3, transit buses are responsible for the large majority of the HRM fleet's GHG emissions. While bus emissions add to HRM's corporate inventory, they help to reduce HRM's community-wide inventory by providing public transit and ultimately reducing the number of single-occupancy vehicle trips in the municipality.

HRM is currently conducting a pilot project to reduce emissions from transit buses with an engine upgrade. If this project proves effective, large-scale bus retrofits may be an action item for reducing GHGs in the future. Furthermore, in 2009 HRM experimented with a 20% biofuel blend in its transit buses. Despite some difficulties with the product, efforts are ongoing and should ultimately result in further GHG reductions.

4.3 Lighting

Emissions from streetlights, traffic lights, park and sports field lights, and any other lights not associated with buildings on lands owned by HRM were calculated in the 2008 inventory. Usage data (in kilowatt-hours) was provided by Nova Scotia's electricity utility, Nova Scotia Power Inc. (NSPI).

It is estimated that HRM used a total of 27,097,175 kWh of electricity for lighting purposes in 2008. This translates into 21,407 tonnes of eCO₂. Detailed lighting calculations are attached as Appendix A.

4.4 Buildings

As mentioned previously, the buildings sector was the most complex in terms of calculating GHG emissions. Power and fuel consumption per building are listed in detail in Appendix A. All assumptions made for estimates where data were not available are noted in Appendix B.

It is estimated that HRM buildings used a total of 54,238,748 kWh of power, 4,874,644 L of furnace oil, and 1,513,155 L of natural gas. 41,949 L of diesel was used in emergency generators. This translates into a total of 59,620 tonnes of eCO₂ for HRM buildings.

Efforts to reduce HRM building emissions include boiler retrofits, natural gas conversions, energy efficiency audits and updates, and more. All new HRM buildings are currently being built to the LEED (Leadership in Energy and Environmental Design) Silver standard. As HRM continues to build in a greener, more energy efficient manner, and to upgrade many of its older buildings, building-related emissions will decline.

5. DISCUSSION

5.1 Comparing Results

While it would be ideal to compare HRM's 2008 inventory to its 2002 inventory, this is not possible for several reasons. First, the HRM corporate inventory no longer includes emissions related to waste water and storm water, as these are now controlled by Halifax Water and not by HRM. These emissions will now be considered in the community inventory.

Second, emissions related to solid waste will now be considered only in the community inventory and not the corporate inventory. ICLEI advised HRM that this is the best practice, since corporate waste cannot readily be accounted for as separate from total community waste.

Third, data availability and quality in 2008 is far superior to the data used in 2002. For example, for the 2002 inventory, an estimate of emissions from lighting was made based on HRM-tracked costs alone. In 2008, the kWh from all metered and unmetered lights owned or leased by HRM were accounted for, as all data was provided by NSPI. Based on these facts, it is assumed here that the 2002 estimate was far less than the actual emissions associated with HRM lighting for that year.

Fourth, the 2008 inventory captures many more of HRM's buildings than the 2002 report. Approximately 135 buildings were included in the 2002 report, while approximately 190 buildings were included in the 2008 report. This is a result of new SAP reports that were able to provide building-specific fuel consumption, as well as the availability of NSPI data for all power used in buildings under HRM accounts. In 2002, most of the data came from paper files and estimation, and does not appear to have been quite as inclusive. There was an 'all other buildings' category in the 2002 inventory, which included approximately 143 buildings with an average size of 3000 square feet. Rough estimates for fuel and power consumption were made for this group of buildings. Estimates were also made for many of HRM's larger buildings for which data could not be easily obtained. Calculations were based on an estimated cost per square foot associated with a given fuel. Therefore the 2008 report includes a more comprehensive list of HRM buildings, with more accurate consumption numbers and less estimation.

5.2 Noteworthy Findings

While the 2002 and 2008 reports cannot technically be compared, there are some interesting findings that deserve consideration. First, the increase in building emissions between 2002 and 2008 is minimal despite the development of some new, large buildings and the inclusion of more of HRM's buildings in the 2008 inventory. Diesel for emergency generators was also included in the buildings section of the 2008 inventory. Total eCO₂ emissions for buildings in 2002 were 56,078 tonnes, and were 59,620 tonnes in 2008. This is a great achievement, due primarily to the many building retrofits conducted by HRM as part of its GHG Emissions Reduction Local Action Plan (LAP). As more retrofit, renewable and district

energy, and LEED construction projects are completed in HRM, overall building emissions are expected to decline.

Fleet calculation methods in 2002 and 2008 were similar, and therefore can be more easily compared. Total emissions from the HRM fleet have risen since 2002, from 27,789 to 34,538 tonnes of eCO₂. Much of this increase can be attributed to the expansion of Metro Transit in the last few years. If we were to only examine the emissions from transit, in 2002 it resulted in 19,256 tonnes and in 2008 it resulted in 26,845 tonnes. This is an increase in emissions by 7,589 tonnes. Since the difference in total fleet emissions between 2002 and 2008 is only 6,749 tonnes, this implies that there was an overall decrease in emissions with the rest of the HRM fleet, excluding transit.

Since 2002, Metro Transit has introduced the MetroLink (bus rapid transit service to downtown) and MetroX (commuter transit service to Tantallon), and it has continued to expand its service network throughout HRM. The increase in emissions from Metro Transit expansion is acceptable to HRM, as it will ultimately result in a decrease in community emissions. Increased public transit reduces the need for single-occupancy vehicle trips within the municipality. These gains in GHG reductions will be clear once an updated estimate is calculated for the community-wide inventory.

The lighting estimates for 2002 and 2008 are the most difficult to compare. In 2002, lighting emissions were estimated based on costs and annual budgets, wattage and average run times. Traffic light emissions were estimated based on streetlight emissions. NSPI provided power consumption, in kWh, for all HRM accounts for the 2008 inventory. This led to a much more complete capturing of the data.

While the 2008 estimate is 21,715 tonnes and the 2002 estimate is 10,371 tonnes, it is assumed that HRM lighting emissions have remained relatively constant since 2002. While HRM has installed some new lighting, what with the development of new communities, for example, it certainly has not doubled the amount of lighting in the municipality. Furthermore, HRM has undertaken significant lighting retrofits that are reducing emissions substantially. All HRM traffic lights are in the process of being replaced by LED traffic lights, estimated to use 80% less energy than traditional traffic lights. LED streetlights are also being tested, estimated to use 60% less energy than traditional streetlights. As HRM moves forward and recalculates its corporate inventory for 2009, 2010 and so on, a more realistic trend in lighting emissions should result.

5.3 The 2012 Reduction Target

Even if HRM were to adjust the 2002 estimate to make it as similar as possible to the 2008 estimate, the HRM corporate GHG reduction target of 20% below 2002 levels by 2012 will not be met. There are several contributing factors for this result, discussed below.

The LAP commitment using absolute numbers based on corporate growth leaves HRM 6% above 2002 levels

The reduction measures in the Local Action Plan (LAP) were estimated to reduce total emissions by 18,884 tonnes, which was estimated to result in the production of 109,917 absolute tonnes of GHGs in 2012. Dillon suggested these actions based on an assumption that it was acceptable to consider emissions in relative terms, instead of in absolute terms, in order to account for HRM's population and municipal growth. Relative emissions account for growth, and they do not represent actual emissions (total emissions numbers are "adjusted" to account for growth). Absolute emissions are the quantity of GHG emissions that HRM is actually emitting.

Our actions must go above and beyond the LAP to meet the 20% commitment, which was a target set in absolute, not relative terms. It is essential (and accepted practice) to measure absolute emissions, because without an absolute reduction in GHG emissions (for HRM, NS, Canada and globally), society will continue to face the serious risks and consequences of climate change.

Wind power contracts failed to be implemented

Wind Power Contracts were completed by HRM; however, the Province and NSPI prevented their execution. It was anticipated that wind power would be one of the major ways for HRM to reduce its emissions.

Funding

The LAP called for \$12 million in funding. HRM has executed approximately \$7 million in projects to-date, with about half of the funds coming from programmes such as the EcoTrust Fund.

Growth

HRM has expanded Metro Transit significantly, resulting in an increase of GHG emissions corporately. As mentioned previously, this will be positive for reducing community-level emissions. HRM has also expanded its building network since 2002, with several new community facilities and fire stations to better service the municipality.

Time lag between setting the target and implementing LAP actions

While the target was set in 2005, projects were not 'shovel-ready', so to speak. They required research, reward, capacity-building and incubation. Therefore, project implementation began closer to 2007. This lag period, while necessary, slowed HRM's progress in reaching its 2012 target. However, the many actions taken by HRM, as well as those planned for the future, will likely begin to decrease corporate emissions more substantially in the years to come.

While the 2012 target will not be met as planned, HRM has succeeded in realizing some significant reductions in emissions at the corporate level, particularly in the buildings sector. HRM has implemented many of the LAP measures for lighting, buildings and transit, all resulting in substantial reductions in GHG emissions. HRM's ongoing commitment to reducing GHGs will continue to decrease emissions over time. HRM is also looking ahead to new reduction targets for the future.

5.4 Economic Considerations

While HRM is committed to reducing GHG emissions for environmental reasons, there is also a significant economic benefit in doing so. Reduced energy use leads to reduced energy costs. Also, infrastructure updates result in lower maintenance and replacement costs in the future. Regional Council has approved a progressive funding tool for future energy efficiency projects in HRM. Energy savings from projects are saved in a reserve and used to fund new energy projects. This 'piggy bank' provides the necessary, consistent support for energy efficiency projects to continue in HRM.

The cost for energy is another important economic factor for consideration. Unit prices for energy have increased between 2002 and 2008. For example, the average cost of gasoline for HRM rose from \$0.46/L to \$0.76/L and the average cost of diesel rose from \$0.39/L to \$0.82/L – a 39.5% and 52.4% increase, respectively. As non-renewable sources of energy, such as coal and oil, become more scarce and expensive to extract, they become more expensive. Being proactive in incorporating renewable energy technologies will help curb the increasing cost of energy over time, and help to reduce overall emissions.

HRM has invested approximately \$6.8 million in energy efficiency projects in the last five years, resulting in savings of \$1,214,000 per year. Therefore, the overall return on investment (ROI) on HRM taxpayers' dollars is 18.75%. The savings from HRM's major energy efficiency projects completed between 2005 and 2009 are listed below in Table 5.1.

Table 5-1: Energy efficiency project costs and savings

PROJECT	COST (\$)	SAVINGS (\$)
Vending Misers	7,500	7,500
Transit Facility Energy Performance Contract	Phase 1: 850,000 Phase 2: 850,000	Phase 1: 200,000 Phase 2: 100,000
LED Traffic Lights	700,000	150,000
Alderney 5	3,600,000	350,000
Halifax North Memorial Library Lighting Retrofit	30,000	7,000
Gas Conversions to High Efficiency	750,000	400,000

6. RECOMMENDATIONS FOR NEXT STEPS

The following next steps are recommended in the continuation of HRM's efforts to reduce GHGs corporately and at the community level:

6.1 Update the GHG LAP

The GHG LAP must be updated, to see what actions have been completed in the LAP, what actions were not or could not be implemented, and which actions remain ongoing. New potential actions for continuing to decrease corporate GHGs will be added.

6.2 Apply for the corporate completion of PCP Milestone 5

Prepare and submit a report to FCM, requesting the completion of the PCP Program for HRM corporately. Work remains for the HRM community component of the PCP Program.

6.3 Calculate the corporate 2009 inventory

HRM will maintain momentum on the annual estimation of its corporate inventory. The 2009 inventory will be calculated and compared to the 2008 numbers.

6.4 Update HRM's community inventory

HRM's community-level emissions will be estimated for the 2008 fiscal year, and a reduction target will be recommended for adoption by HRM Council.

6.5 Revise community energy plan

Once a reduction target is approved, HRM's Community Energy Plan will be revised, with concrete actions for reducing emissions. This report will be similar to the corporate LAP.

7. CONCLUSION

HRM has made good progress in reducing its corporate GHG emissions in the last several years. The 2012 target is no longer really applicable, because the 2002 and 2008 GHG inventories cannot technically be compared due to large differences in data quality and availability, as well as inventory protocols and structural changes within HRM. However, HRM celebrates its many successes in completed energy efficiency projects, particularly in the buildings sector, resulting in major GHG emissions reductions. While HRM assumed corporate responsibility for increased emissions due to expanded public transit, this is seen as a positive situation for HRM when looking at the bigger picture. Improved transit will decrease community-wide emissions and improve the sustainability of transportation throughout the municipality. The transit expansion will continue to result in environmental and social rewards for the entire HRM community in years to come.

HRM plans to revise its LAP to include new measures for reductions, and to re-estimate its corporate emissions inventory on an annual basis. Future inventory estimates will be comparable to the 2008 estimate, and HRM will be able to track its progress more effectively from here on. HRM looks forward to setting new targets for the future that are in line with provincial and federal targets.

HRM continues to work on energy efficiency projects, with several large projects underway during the writing of this report. The progressive funding tool approved by Regional Council will allow HRM's efforts to continue in this critical area.

HRM plans to begin an estimation of community-wide emissions in the near future, and to begin working with the larger community towards absolute reductions in GHG emissions in the municipality. This will require substantial community engagement and collaboration. Ultimately, HRM aims to complete the PCP program at both the corporate and community levels. HRM wishes to be a leading Canadian municipality in the very challenging area of climate change mitigation.

8. REFERENCES

Dillon Consulting Limited. 2005. Halifax Regional Municipality Corporate Local Action Plan To Reduce Greenhouse Gas Emissions. Available online at <http://www.halifax.ca/environment/documents/HRMCorporateClimateLocalActionPlan.pdf>. Last accessed May 11, 2010.

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APPENDIX A: GHG CALCULATION SPREADSHEETS

Vehicle Fleet

Corporate Inventory

HRM Fleet, including transit

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)	
		Total Use	Total eCO2	Total Use	Total eCO2 (t)
TRANSIT	FERRIES	0	0	564,557	1,542
TRANSIT	BUSES	0	0	9,266,634	25,303
FL001: 1 TON 2 WH DR	52TD005	0	0	6,260	17
	52TD012	0	0	2,378	6
	52TD013	0	0	4,032	11
	52TU001	0	0	4,975	14
	53TC001	0	0	1,581	4
	53TD003	0	0	3,028	8
	53TU001	0	0	2,444	7
	53TU002	0	0	2,532	7
	53TU003	0	0	4,517	12
	53TX001	0	0	3,585	10
	53TX002	0	0	3,466	9
	53TZ001	0	0	2,103	6
	53TZ002	0	0	1,951	5
	53TZ003	0	0	2,042	6
	B400	0	0	1,463	4
	B401	0	0	827	2
	B402	0	0	2,113	6
	P341	0	0	1,014	3
	P501	0	0	1,791	5
	52TP010	3,317	8	0	0
	52TZ009	2,401	6	0	0
	52TZ010	1,877	4	0	0
	52TZ011	4,107	10	0	0
	52TZ012	1,816	4	0	0
	52TZ013	1,943	5	0	0
	52TZ014	2,450	6	0	0
	71TZ036	381	1	0	0
FL002: 1 TON 2 WH DR 4-DR	52TD001	0	0	4,643	13
	52TD002	0	0	2,093	6
	52TD003	0	0	1,934	5
	52TD004	0	0	4,962	14
	52TD007	0	0	3,164	9
	52TD008	0	0	3,408	9
	52TD009	0	0	1,324	4
	52TD010	0	0	4,846	13
	52TD011	0	0	2,082	6
	P425	0	0	3,549	10
	52TZ022	6,018	14	0	0
	52TZ023	6,251	15	0	0
	52TZ049	7,656	18	0	0
FL003: 1 TON 4X4	53TD001	0	0	3003.80	8
	53TD002	0	0	2589.18	7
	53TF001	0	0	945.50	3
	53TF002	0	0	1691.20	5
	6TZ001	1504.00	4	0	0
FL004: 1 TON 4X4 4 DOOR	52TF001	0	0	2420.60	7
	52TF002	0	0	1352.40	4
	53TC002	0	0	1784.00	5
FL005: PASSENGER VEHICLE	51CZ003	0	0	771.90	2
	51CZ004	0	0	667.80	2
	51CZ005	0	0	938.20	3
	31CZ002	551.40	1	0	0
	31CZ007	1960.80	4	0	0
	31CZ016	458.10	1	0	0
	31CZ017	7301.20	17	0	0
	31CZ018	6746.40	16	0	0
	31CZ019	5374.80	13	0	0
	31CZ020	7344.00	17	0	0
	31CZ021L	2625.40	6	0	0
	31CZ022L	1042.70	2	0	0
	32TZ001	13791.80	33	0	0
	32TZ002	11513.20	27	0	0
	51CZ006	706.60	2	0	0
	51CZ007L	1173.50	3	0	0
	51CZ009L	1929.80	5	0	0
	51CZ010L	348.10	1	0	0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	51CZ013L	677.30	2			0
	51CZ014L	315.30	1			0
	51CZ015L	1095.50	3			0
	51CZ016L	787.60	2			0
	51CZ017L	804.70	2			0
	51CZ018L	1566.80	4			0
	51CZ019L	1677.00	4			0
	51CZ020L	2301.30	5			0
	51CZ021L	566.00	1			0
	51CZ022L	1314.40	3			0
	51CZ023L	953.70	2			0
	51CZ024L	1498.30	4			0
	51CZ025L	1104.20	3			0
	51CZ026L	986.70	2			0
	51CZ027L	897.90	2			0
	51CZ028L	1140.50	3			0
	51CZ029L	1379.30	3			0
	51CZ030L	774.30	2			0
	51CZ031L	394.20	1			0
	51CZ032L	795.30	2			0
	51CZ033L	836.70	2			0
	51CZ034L	332.00	1			0
	51CZ035L	1859.10	4			0
	51CZ036L	832.00	2			0
	51CZ037L	1232.70	3			0
	51CZ038L	603.60	1			0
	51CZ039L	1519.70	4			0
	51CZ040L	1487.60	4			0
	51TZ028	3283.30	8			0
	51VZ014	2092.00	5			0
	61CZ002	1138.80	3			0
	61VZ009	987.9	2			0
	71CZ006	1249.00	3			0
	71CZ016	1489.80	4			0
	71CZ043L	114.00	0			0
	71CZ050	598.20	1			0
	71CZ052	1175.50	3			0
	71CZ053	1329.30	3			0
	71CZ058	736.40	2			0
	71CZ071	78.30	0			0
	71CZ072	244.70	1			0
	71CZ073	160.20	0			0
	71CZ074	249.60	1			0
	71CZ075	276.10	1			0
	71CZ076	283.60	1			0
	71CZ077L	371.60	1			0
	71CZ078L	304.60	1			0
	71CZ079	374.3	1			0
	71CZ080	686.70	2			0
	71CZ081	146.60	0			0
	71CZ082	109.90	0			0
	71CZ090L	1682.30	4			0
	71CZ091L	396.80	1			0
FL006: 1/2 TON 4X4	51TZ030	5148.30	12			0
	71TZ004	3228.80	8			0
	71TZ020	5409.2	13			0
	71TZ021	3054.40	7			0
	P415	80.00	0			0
FL007: LOADER	55LP001			21710.90		50
	61QZ007			466.70		1
	H73135			5109.30		14
	H73136			799.1		2
	H73137			5501.20		15
	H73138			3253.40		9
	H73140			5022.80		14
	H73142			9203.70		25
	H73143			134.40		0
	WR90			150.00		0
FL010: 3/4 TON 4WD PU	51TZ029	3951.00	9			0
	52TP001	6862.10	16			0
	52TP002	1504.50	4			0
	52TP003	1105.70	3			0
	52TP004	3382.90	8			0
	52TP005	3030.00	7			0
	52TP006	1439.20	3			0
	52TP007	3494.10	8			0
	52TP008	2702.00	6			0
	52TP009	2278.10	5			0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total cCO2 (t)
		Total Use	Total cCO2	Total Use	Total cCO2	
	52TS001	1529.70	3			0
	52TS002	1299.50	3			0
	52TZ019	4421.70	10			0
	52TZ020	4400.00	10			0
	52TZ021	3203.60	8			0
	52TZ032	2748.50	6			0
	52TZ033	6123.20	14			0
	52TZ042	2715.20	6			0
	52TZ044	5906.00	14			0
	52TZ045	5134.40	12			0
	52TZ046	5196.00	12			0
	52TZ048	5432.60	13			0
	52TZ050	4814.80	11			0
	52TZ051	5213.40	12			0
	52TZ054	2144.30	5			0
	62TZ002	1839.50	4			0
	62TZ003	2126.50	5			0
	P455	257.00	1			0
FL011: 3/4 CU YD-BOB CAT	51EH002		0	1233.70		3
	51EH005		0	807.70		2
	51EZ002		0	1512.20		4
	51EZ003		0	2364.30		6
	51EZ004		0	70.70		0
	51EZ006		0	533.80		1
	51EZ007		0	1046.00		3
	51EZ008		0	254.30		1
	51EZ009		0	1486.10		4
	C-010		0	96.70		0
	C-122		0	139.70		0
FL012: 3/4 TON 2 WH DR	52TZ001	5121.10	12			0
	52TZ002	5674.00	13			0
	52TZ003	2734.70	6			0
	52TZ004	2688.60	6			0
	52TZ005	3890.70	9			0
	52TZ006	2078.00	5			0
	52TZ007	4737.30	11			0
	52TZ015	3298.70	8			0
	52TZ016	6136.70	14			0
	52TZ017	4305.00	10			0
	52TZ018	4060.40	10			0
	52TZ024	1277.20	3			0
	52TZ025	2785.00	7			0
	52TZ026	3996.70	9			0
	52TZ027	3438.60	8			0
	52TZ028	5337.50	13			0
	52TZ029	3024.50	7			0
	52TZ030	1510.10	4			0
	52TZ031	1399.40	3			0
	52TZ034	4939.50	12			0
	52TZ035	5634.50	13			0
	52TZ036	4121.70	10			0
	52TZ037	1549.80	4			0
	52TZ038	2223.80	5			0
	52TZ039	2373.30	6			0
	52TZ040	4460.10	11			0
	52TZ041	4867.80	11			0
	52TZ043	3837.30	9			0
	52TZ052	6703.90	16			0
	62TZ005	11071.70	26			0
FL013: 3/4 YD BACKHOE	53LH001		0	3071.80		8
	53LH002		0	2388.16		7
	53LH003		0	2767.20		8
	53LH004		0	4930.40		13
	53LH005		0	2191.90		6
	53LH006		0	3180.00		9
	H73133		0	883.80		2
	H73141		0	3178.20		9
FL014: 5 TON DU (SPR & FLOW)	54TS001		0	9243.00		25
	54TS002		0	8823.20		24
	54TS003		0	10634.80		29
	54TS004		0	9625.50		26
	54TS005		0	11373.80		31
	54TS006		0	9318.60		25
	54TS007		0	8901.60		24
	54TS008		0	7995.40		22
	54TS009		0	10496.90		29
	54TS010		0	13184.40		36
	SSTW017		0	10582.70		29

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	55TW018		0	5696.20		16
	55TW020		0	8400.50		23
	55TW021		0	6912.80		19
	B204		0	314.40		1
	B205		0	553.40		2
	B206		0	8296.50		23
	B207		0	5314.80		15
	B208		0	2141.10		6
	B209		0	881.60		2
	B210		0	256.20		1
	B211		0	5911.70		16
	B219		0	7231.10		20
	B220		0	6723.70		18
	B221		0	4412.50		12
	B222		0	6992.80		19
	B223		0	4921.00		13
	H78158		0	256.30		1
	H78173		0	7587.22		21
FL015: 5 TON TRUCK	54TD001		0	4060.00		11
	54TD002		0	4977.20		13
	54TD003		0	1537.60		4
	54TD004		0	3762.18		10
	54TK001		0	8408.82		23
	54TZ001		0	1798.80		5
	55TZ002		0	5766.40		16
	64BZ001		0	12989.80		35
	B200		0	1506.10		4
	H78130		0	5235.47		14
	H78131		0	3032.50		8
FL016: 17 CUBE VAN	H78237		0	4245.69		12
	62VZ012	4543.50	11			0
FL018: 1 T C/W ARIAL DEVICE	52VQ001		0	2161.90		6
	52VQ002		0	4117.90		11
	53TC003		0	3555.30		10
	53TC004		0	3796.60		10
	53TQ001		0	5467.24		15
	53TQ002		0	4375.40		12
	53VB001		0	6744.61		18
	B500		0	2544.11		7
	B501		0	1917.90		5
	B502		0	3912.57		11
	B503		0	1428.90		4
	B504		0	5249.30		14
	P500		0	1102.60		3
FL021: ARTICULATED TRACTOR	52DA001		0	2611.50		7
	52DA002		0	74.50		0
	52DA003		0	1560.80		4
	52DA006		0	592.80		2
	52DA007		0	5092.90		14
	52DA008		0	4024.20		11
	54LA001		0	7214.90		20
	K118		0	90.20		0
	K120		0	29.70		0
FL033: CB/S JET CLEAN TRUCK	55TY001		0	13129.02		36
	55TY002		0	5403.44		15
	B166		0	7436.00		20
	B212		0	6828.30		19
	B213		0	1607.16		4
	C-180		0	1933.40		5
	H72172		0	1365.70		4
	H721781		0	5289.65		14
FL036: COMPACT ROLLERS (S)	51ZA001		0	630.60		2
FL037: COMPACT ROLLERS (L)	H74145		0	157.90		0
FL045: DS CA VAN V6 (AUTO)	51VZ003	2276.50	5			0
	51VZ004	661.00	2			0
	51VZ005	922.30	2			0
	51VZ006	1882.80	4			0
	51VZ007	2282.70	5			0
	51VZ008	928.20	2			0
	51VZ009	556.10	1			0
	51VZ010	1117.80	3			0
	51VZ011	5216.10	12			0
	51VZ012	3301.10	8			0
	61VZ002	172.90	0			0
	61VZ003	533.90	1			0
	61VZ004	1333.60	3			0
	61VZ005	1588.30	4			0
	61VZ006	1659.30	4			0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	61VZ010	1101.80	3			0
	71VZ009	2868.90	7			0
	71VZ010	4995.60	12			0
FL049: FARM TRACTOR	51LZ001		0	570.20		2
	51QZ001		0	697.80		2
	51QZ002		0	637.56		2
	51QZ003		0	568.60		2
	51QZ004		0	1647.30		4
	51QZ005		0	827.60		2
	52QB001		0	2529.60		7
	52QB002		0	1906.20		5
	61QZ001		0	1170.80		3
	61QZ002		0	653.00		2
	61QZ003		0	525.60		1
	61QZ004		0	1220.10		3
	61QZ006		0	1123.50		3
	H76121		0	147.00		0
FL052: 3 TON TRUCK	52TD014		0	1172.60		3
	53TD004		0	4936.30		13
	53TD005		0	4328.00		12
	53TK001		0	4036.90		11
	53TK002		0	9488.22		26
	53TK003		0	3621.15		10
	53TK004		0	3734.54		10
	53TS001		0	3201.70		9
	53TS002		0	639.18		2
	53TS003		0	2151.00		6
	53TS004		0	428.40		1
	53TS005		0	2448.10		7
	53TS006		0	2138.70		6
	53TS007		0	7079.10		19
	53TS008		0	3422.30		9
	53TS009		0	4768.00		13
	53TS010		0	2028.70		6
	53TS011		0	5825.10		16
	53TS012		0	7645.90		21
	53TS013		0	5219.10		14
	53TS014		0	2912.70		8
	53TS015		0	6965.70		19
	53TS016		0	5643.90		15
	53TS018		0	6064.70		17
	53TS019		0	9244.50		25
	53TS020		0	7338.60		20
	53TS021		0	8676.10		24
	53TU004		0	3888.90		11
	53TZ004		0	2987.99		8
	53TZ006		0	3916.20		11
	53TZ007		0	3742.93		10
	53TZ008		0	4390.00		12
	53TZ009		0	3609.90		10
	53TZ010		0	2984.00		8
	53TZ011		0	2909.20		8
	53TZ012		0	113.90		0
	53TZ013		0	118.10		0
	54TQ002		0	9961.20		27
	55TD004		0	11013.40		30
	H78180		0	520.40		1
FL054: 1/2 TON P/U TR	51TZ008	4478.70	11			0
	51TZ009L	4290.60	10			0
	51TZ010L	3081.30	7			0
	51TZ011L	2933.70	7			0
	51TZ012L	3259.00	8			0
	51TZ013L	2077.20	5			0
	51TZ014L	4785.80	11			0
	51TZ015L	2327.50	5			0
	51TZ016L	4804.20	11			0
	51TZ017L	3358.70	8			0
	51TZ018L	3460.00	8			0
	51TZ019L	2773.80	7			0
	51TZ020L	13000.00	31			0
	51TZ021L	10826.80	26			0
	51TZ022L	2795.70	7			0
	51TZ023L	5907.90	14			0
	51TZ024L	4217.60	10			0
	51TZ025L	2276.20	5			0
	51TZ026L	3983.10	9			0
	51TZ027L	1164.80	3			0
	52TP011	1209.10	3			0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	52TZ047	3736.50	9			0
	71TZ052	157.30	0			0
	71TZ052L	2363.60	6			0
	71TZ053L	4006.40	9			0
	71TZ054L	2388.10	6			0
	71TZ055L	3253.60	8			0
	71TZ056L	1687.60	4			0
	71TZ057L	1808.00	4			0
	71TZ058L	2215.60	5			0
	71TZ059L	800.10	2			0
	71TZ060L	4057.20	10			0
	71TZ061L	3996.10	9			0
	71TZ062L	3256.10	8			0
	71TZ063	274.40	1			0
	71TZ063L	3431.10	8			0
	71TZ064	250.90	1			0
	71TZ064L	4311.50	10			0
	71TZ065L	1652.00	4			0
	71TZ066L	3114.30	7			0
	71TZ067L	2763.20	7			0
	71TZ069L	1475.10	3			0
	71TZ070L	6091.60	14			0
	71TZ071L	3231.10	8			0
FL066: LOADER MTD SNOW B	L103		0	620.60		3
FL095: TANDEM DU TR C/W	55TD001		0	7431.80		20
	55TD002		0	7495.30		20
	55TW001		0	7198.80		20
	55TW002		0	11402.20		31
	55TW003		0	10410.36		28
	55TW004		0	17982.70		49
	55TW005		0	11088.00		30
	55TW006		0	19561.30		53
	55TW007		0	10290.30		28
	55TW008		0	22241.10		61
	55TW009		0	10114.30		28
	55TW010		0	13274.90		36
	55TW011		0	17960.80		49
	55TW012		0	25068.70		68
	55TW013		0	23668.80		65
	55TW014		0	20047.30		55
	55TW015		0	17663.90		48
	55TW016		0	19839.20		54
	55TW019		0	4841.20		13
	66TZ001		0	21628.40		59
	B201		0	1825.60		5
	B202		0	6016.60		16
	B203		0	7851.90		21
	B215		0	5583.30		15
	B217		0	9221.60		25
	B218		0	12919.50		35
FL104: FS CARGO VAN	52VZ003		0	1999.90		5
	53VZ001		0	1478.00		4
	51VZ008	2212.00	5			0
	51VZ013	2857.90	7			0
	52VZ001	1724.50	4			0
	52VZ002	3496.90	8			0
	52VZ004	2583.80	6			0
	52VZ005	5699.90	13			0
	52VZ006	3323.80	8			0
	52VZ007	2340.90	6			0
	52VZ008	1797.70	4			0
	52VZ009	418.50	1			0
	52VZ010	630.20	1			0
	61VZ007	1793.80	4			0
	62VZ001	2330.70	6			0
	62VZ002	1984.30	5			0
	62VZ003	5774.60	14			0
	62VZ004	2577.30	6			0
	62VZ006	1264.00	3			0
	62VZ007	3751.00	9			0
	62VZ008	5658.90	13			0
	62VZ009	386.00	1			0
	62VZ011	2536.80	6			0
	62VZ015	4003.40	9			0
	62VZ016	4613.40	11			0
	62VZ017	3996.00	9			0
	62VZ018	3271.20	8			0
	62VZ019	5307.70	13			0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	62VZ020	3096.30	7			0
	62VZ021	1340.40	3			0
	62VZ022	4750.60	11			0
	62VZ023	3476.40	8			0
	62VZ025	5504.00	13			0
	71VZ011	3141.20	7			0
FL105: TR HWAY LINE PAINTER	55T001		0	5591.96		15
FL107: TR POT HOLE PATCHER	54TZ002		0	341.10		1
	H78174		0	3766.10		10
FL108: S T C/W ARIAL DEVICE	54TB001		0	2278.86		6
	54TQ001		0	7933.50		23
	H72158		0	1119.50		3
FL109: TRUCKSTER	61UZ002		0	575.00		2
	61UZ003		0	146.70		0
	SE455		0	185.00		1
	SE456		0	205.10		1
FL111: SERVICE VEHICLES	53TQ003		0	3831.80		10
	53TQ004		0	2067.20		6
FL120: EXCAVATOR	51XZ001		0	336.10		1
	51XZ002		0	395.80		1
	53XZ001		0	3323.80		9
	54XZ001		0	768.50		2
FR001: CAR	06-373C		0	642.50		2
	00-131C	961.10	2			0
	00-133C	1052.40	2			0
	00-135C	2086.40	5			0
	00-136C	894.60	2			0
	01-146C	798.20	2			0
	02-282C	1515.8	4			0
	02-283C	977.40	2			0
	02-284C	1172.50	3			0
	02-285C	391.20	1			0
	02-286C	796.00	2			0
	02-287C	997.80	2			0
	03-308C	72.50	0			0
	03-326C	919.30	2			0
	03-327C	1473.00	3			0
	07-400C	1027.80	2			0
	07-407C	1349.10	3			0
	07-408C	1037.00	2			0
	07-409C	862.20	2			0
	07-411C	1924.10	5			0
	08-423C	873.70	2			0
	08-433C	1398.90	3			0
	08-441C	804.40	2			0
	08-442C	610.70	1			0
	97-100C	705.20	2			0
	97-102C	665.60	2			0
	97-104C	54.20	0			0
FR002: PICK-UP	07-418U		0	6011.00		16
	07-419U		0	5640.60		15
	08-429U		0	100.00		0
	00-130U	171.50	0			0
	00-132C	884.60	2			0
	00-138U	1769.20	4			0
	00-139U	3747.00	9			0
	01-274U	416.10	1			0
	01-275U	1411.30	3			0
	02-278U	3428.90	8			0
	02-279U	1045.80	2			0
	02-280U	902.70	2			0
	03-313U	4627.70	11			0
	03-315U	3377.70	8			0
	03-317U	83.80	0			0
	03-328U	977.30	2			0
	04-330U	1303.60	3			0
	04-337U	2728.90	6			0
	05-355U	2905.50	7			0
	05-356U	60.90	0			0
	05-358U	1405.00	3			0
	05-359U	6035.10	14			0
	05-360U	1733.20	4			0
	06-372U	1918.20	5			0
	07-389U	1252.10	3			0
	07-410U	4651.20	11			0
	07-414U	4616.60	11			0
	07-415U	5099.20	12			0
	08-450U	246.20	1			0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	09-451U	370.90	1			0
	09-452U	842.10	2			0
	09-453U	490.10	1			0
	09-454U	205.90	0			0
	09-456U	330.90	1			0
	09-457U	365.30	1			0
	97-106U	123.60	0			0
	98-115U	945.80	2			0
	98-116U	1157.70	3			0
	98-260U	160.90	0			0
	99-119U	3509.70	8			0
	99-123U	1928.70	5			0
	99-125U	2179.50	5			0
	99-126U	925.10	2			0
	99-127U	2129.90	5			0
FR003: VAN	06-379U		0	1772.50		5
	07-413U		0	4254.20		12
	97-105U		0	244.70		1
	00-129U	9425.40	23			0
	00-134V	8662.90	20			0
	00-137V	273.20	1			0
	01-140V	2229.70	5			0
	01-141V	1583.50	4			0
	01-149V	7198.80	17			0
	03-309V	1931.10	5			0
	03-325U	2995.00	7			0
	03-334U	1904.00	4			0
	04-335U	945.10	2			0
	04-350U	1633.20	4			0
	06-392V	960.50	2			0
	07-393U	2701.30	6			0
FR006: ENGINE	03-331E		0	5019.90		14
	03-332E		0	4957.40		14
	04-353E		0	4264.00		12
	06-390E		0	1113.90		3
	06-397E		0	1151.90		3
	07-402E		0	4551.00		12
	86-202U		0	356.90		1
	89-50E		0	2711.70		7
	92-230E		0	431.20		1
	92-78E		0	1215.50		3
	92-76E		0	1000.20		3
	93-81E		0	944.10		3
	93-83E		0	839.80		2
	95-249E		0	756.70		2
	95-92E		0	1818.00		5
	96-253E		0	655.50		2
	97-01E		0	4681.40		13
	97-02E		0	284.12		1
	97-108E		0	371.20		1
	97-109E		0	213.49		1
	97-110E		0	4422.90		12
	29538	198.00	0			0
	29893	36.30	0			0
	30746	64.90	0			0
FR007: AERIAL	02-305L		0	458.05		1
	87-37Q		0	116.50		0
	95-93P		0	357.20		1
FR008: SNORKLE	89-48P		0	1304.90		4
FR009: QUINT	01-143Q		0	8793.00		24
	01-144Q		0	7644.30		21
	07-417Q		0	8999.10		25
	08-439Q		0	9586.20		26
	90-57Q		0	1685.00		5
	90-59Q		0	3216.00		9
	95-248Q		0	498.10		1
	28374	15.80	0			0
FR010: ANTIQUE	60-06A	21.10	0			0
FR012: RESCUE UNIT	07-404R	1461.10	3			0
	30106	155.00	0			0
	03-321R	154.60	0			0
	08-422R	1426.70	3			0
	99-266R	72.70	0			0
FR014: TACTICAL	92-73R		0	3482.60		10
	92-73TS		0	1812.60		5
	95-95R		0	356.30		1
	95-95TS		0	247.10		1
FR015: TANKER	00-270T		0	325.30		1

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	02-298T		0	87.40	0	
	02-302T		0	6112.20	17	
	04-339T		0	342	1	
	06-375T		0	135.00	0	
	06-377T		0	1556.40	4	
	06-380T		0	246.90	1	
	07-431T		0	473.1	1	
	89-214T		0	544.8	1	
PL001: MARKED VEHICLE	20	945.80	2		0	
	27	1882.30	4		0	
	37	588.90	1		0	
	38	4914.80	12		0	
	40	2481.10	6		0	
	49	5207.40	12		0	
	55	1103.60	3		0	
	57	3374.50	8		0	
	60	9680.50	23		0	
	61	7856.30	19		0	
	62	2011.60	5		0	
	63	2272.30	5		0	
	66	1478.20	3		0	
	67	429.20	1		0	
	71	5596.90	13		0	
	73	7572.60	18		0	
	74	6616.90	16		0	
	75	14961.10	35		0	
	76	1193.40	3		0	
	101	13661.70	32		0	
	102	4613.00	11		0	
	103	7015.10	17		0	
	104	61.70	0		0	
	108	2121.60	5		0	
	111	1938.50	5		0	
	118	42.20	0		0	
	131	218.50	1		0	
	137	2329.70	6		0	
	139	3560.90	8		0	
	142	11761.70	28		0	
	143	322.20	1		0	
	144	1566.60	4		0	
	147	1942.40	5		0	
	150	821.90	2		0	
	151	3510.30	8		0	
	154	2936.30	7		0	
	155	1564.00	4		0	
	159	10510.20	25		0	
	162	2565.40	6		0	
	163	2431.70	6		0	
	192	1727.80	4		0	
	196	469.60	1		0	
	197	830.60	2		0	
	199	1591.30	4		0	
	201	442.30	1		0	
	222	2754.80	7		0	
	223	4295.10	10		0	
	236	1222.60	3		0	
	103A	433.80	1		0	
	142A	3568.80	8		0	
	147A	38.70	0		0	
	206L	2923.40	7		0	
	207L	4250.00	10		0	
	208L	3693.20	9		0	
	209L	823.10	2		0	
	210L	555.20	1		0	
	211L	1434.20	3		0	
	212L	1228.80	3		0	
	213L	1128.10	3		0	
	214L	885.00	2		0	
	215L	1012.80	2		0	
	216L	1129.80	3		0	
	217L	982.00	2		0	
	218L	1007.10	2		0	
	62A	105.00	0		0	
	C21	7018.10	17		0	
	C22	11625.20	27		0	
	C23	21896.70	52		0	
	C24	1372.80	3		0	
	C24A	270.40	1		0	

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	C25	5410.70	13			0
	C26	6974.50	16			0
	C30	919.40	2			0
	C31	15698.30	37			0
	C33	1590.30	4			0
	E41	13611.40	32			0
	E42	6199.30	15			0
	E43	1186.90	3			0
	E45	2417.70	6			0
	E46	2732.80	6			0
	E47	471.20	1			0
	E50	3102.50	7			0
	E54	3925.90	9			0
	E56	3831.90	9			0
	K9-2	3097.00	7			0
	K9-3	3899.90	9			0
	K9-4	5640.60	13			0
	K9-5	2786.50	7			0
	K9-6	1335.00	3			0
	K9-7	4236.80	10			0
	K9-8	4314.10	10			0
	K9-8A	293.30	1			0
	P34	6096.20	15			0
	P36	4718.30	11			0
	T16	3321.00	8			0
	T17	4159.00	10			0
	T18	4602.60	11			0
	T19	2287.00	5			0
	T28	2089.90	5			0
	T79	2859.10	7			0
	W10	1471.10	3			0
	W11	6949.40	16			0
	W12	16843.50	40			0
	W14	2598.30	6			0
	W2	7022.40	17			0
	W3	3373.00	8			0
	W4	6694.60	16			0
	W5	427.30	1			0
	W6	3032.10	7			0
	W6A	1255.20	3			0
	W7	26076.00	62			0
	W7A	3355.20	8			0
	W9	2707.50	6			0
PL002: UNMARKED VEHICLE	219		0	6953.30		19
	220		0	380.50		1
	39	2553.00	6			0
	58	1938.00	5			0
	59	2274.90	5			0
	65	1011.20	2			0
	68	501.60	1			0
	69	3822.00	9			0
	72	2652.70	6			0
	78	2250.20	5			0
	100	1791.80	4			0
	105	2717.50	6			0
	107	897.20	2			0
	109	993.10	2			0
	110	2201.20	5			0
	112	3159.40	7			0
	114	38.40	0			0
	115	1799.70	4			0
	119	1367.40	3			0
	120	1515.60	4			0
	121	452.00	1			0
	122	2095.70	5			0
	123	1943.80	5			0
	124	583.30	1			0
	125	2078.60	5			0
	127	624.00	1			0
	128	541.00	1			0
	129	1274.50	3			0
	130	1785.70	4			0
	132	3189.90	8			0
	133	990.80	2			0
	134	971.50	2			0
	136	2456.10	6			0
	138	1795.60	4			0
	140	2541.70	6			0

Vehicle Type	Vehicle Name/Technical Object Number	Gasoline (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2	Total Use	Total eCO2	
	141	1258.50	3			0
	144	1566.60	4			0
	146	1491.00	4			0
	148	1106.40	3			0
	149	804.00	2			0
	152	2372.30	6			0
	153	831.30	2			0
	156	2312.30	5			0
	157	939.30	2			0
	158	5772.80	14			0
	160	1415.30	3			0
	161	1383.90	3			0
	164	3290.20	8			0
	165	1027.60	2			0
	166	2980.90	7			0
	167	1061.30	3			0
	168	1431.80	3			0
	169	1013.40	2			0
	170	2335.10	6			0
	171	1729.60	4			0
	172	3668.00	9			0
	173	1318.80	3			0
	174	1182.50	3			0
	176	2658.10	6			0
	177	1245.60	3			0
	178	634.00	1			0
	179	1716.20	4			0
	180	2446.90	6			0
	181	602.40	1			0
	182	190.30	0			0
	183	1061.70	3			0
	184	1392.10	3			0
	185	2730.40	6			0
	186	2685.80	6			0
	187	236.20	1			0
	188	2359.30	6			0
	189	1279.80	3			0
	190	539.70	1			0
	191	2680.90	6			0
	193	2527.70	6			0
	194	1941.40	5			0
	195	2169.20	5			0
	198	1822.20	4			0
	200	1139.00	3			0
	221	5665.10	13			0
	224	3095.50	7			0
	226	2809.00	7			0
	227	1620.10	4			0
	228	1314.30	3			0
	229	4236.70	10			0
	230	2773.20	7			0
	231	1545.20	4			0
	232	1389.10	3			0
	233	1376.70	3			0
	234	527.30	1			0
	235	944.60	2			0
	237	2179.30	5			0
	239	331.80	1			0
	240	1206.60	3			0
	241	582.90	1			0
	05004	1203.20	3			0
	05317	1152.10	3			0
	131A	85.80	0			0
	133A	309.60	1			0
	202L	2352.10	6			0
	203L	981.30	2			0
	204L	2682.30	6			0
	205L	3281.80	8			0
	K9-9	6969.60	16			0
	R16	237.80	1			0
TR012: SERVICE VANS	33TZ010		0	4303.60		12
OTHER	GE CAPITAL CARDS	73,168	173	91,964		251
OTHER	FUEL CARDS	138,699	328	55,341		154
Total	Total	1,647,232	3,891	11,223,563		30,647

Lighting

Corporate Inventory

Includes street, traffic, sportsfield and park lights.

Lighting Group Name	Electricity (kWh)	
	Total Use	Total eCO2 (t)
1 FRENCH VILL STN RD	1,213	1
100 LEIBLIN DR	9,024	7
100 PENHORN DR	10,200	8
101 WYSE RD INFO SIGN	5,601	4
11 MOUNT HOPE AVE	7,920	6
110 APPIAN WAY PARK LIGHTS	540	0
115 SMITHS RD	3,951	3
1214 BEDFORD HWY	17,640	14
1225 OLD SACKVILLE RD	9,048	7
125 HIGHFIELD PARK DR (NOW 101 HIGHFIELD PARK)	64,560	51
1291 MINEVILLE ROAD	540	0
130 OCHTERLONEY & 19 IRISHTOWN RD	1,848	1
130 ROSEMARY DR PARK LIGHTS	4,320	3
14 PRINCE ALBERT RD	8,496	7
1600 BED HWY TRF LGH	27,810	22
1603 LOWER WATER	34,110	27
1820 BEDFORD HWY	3,314	3
190 CHAIN LAKE DR	9,825	8
194 A WAVERLEY RD BOAT RAMP	2,400	2
2 A LETHBRIDGE AVE	1,800	1
20 WYSE RD	20,235	16
2057 OWLS HEAD	739	1
207 WINDSOR JCT RD	1,800	1
210 THOMAS RADDALL DR	113,115	89
2239 PROSPECT RD	6,480	5
2240 OLD SAMBRO RD	1,800	1
22746 HIGHWAY 7 PARK LIGHTS	1,800	1
2419 CREIGHTON ST	214	0
255 BISSETT	551	0
2583 BARRINGTON ST	40,200	32
26 LEAMAN DR	9,475	7
26 THOMAS RADDALL DR	4,900	4
2790 OXFORD ST	3,624	3
294 HERRING COVE RD PARK LIGHTS	804	1
30 CHARLES RD	1,248	1
30 JOHN BRENTON DR POLE #2	683	1
30 JOHN BRENTON DR POLE #3A	663	1
30 JOHN BRENTON DR POLE #3B	1,585	1
3550 NOVALEA DR	1,987	2
39 POLARA ST STLT	780	1
416 HAMMONDS PLAINS RD	743	1
427 WINDSOR JCT RD	4,595	4
43 BORDEN AVE	35,522	28
50 CIRCLE DR	1,907	2
535 PORTLAND ST BUS TERM	5,604	4
57 GANDER AVE PARK LIGHTS	1,845	1
609 COLBY DR	924	1
6235 AFRICVILLE RD	167	0
640 WINDMILL RD	5,490	4
645 WINDMILL RD	5,496	4
6908 CHEBUCTO RD	106	0
7 1/2 DUSTAN ST	2,010	2
71 FIRST LAKE DR	1,980	2
7124 ST MARGS BAY RD	1,200	1
8 VALLEYFORD RD	65,745	52
91 ALDERNEY DR	5,558	4
92 DOWNS AVE	1,129	1
920 BEDFORD HWY	11,040	9
99 FLAMINGO DR ICE RINK	960	1
AKERLEY BLVD	13,155	10
ALBRO LAKE BEACH	780	1
ALBRO LAKE RD	1,620	1
ALDERNEY DR	79,680	63
ARMCREST DR PLAYGROUND	3,000	2
ARMDALE ROTARY ST	31,546	25
ATLANTIC ACRES - SIGN	3,312	3
BALDEAGLE PLACE	109,836	87
BALL FIELD BY COLE IHR PL	3,807	3
BALLFIELD (B J HIGGINS)	8,550	7
BARRINGTON ST BRIDGE APPROACH ENCLOSE	111,960	88
BAYERS LAKE DR	12,309	10

Lighting Group Name	Electricity (kWh)	
	Total Use	Total eCO2 (t)
BAYERS LAKE PARK	14,040	11
DAYERS LAKE	3,312	3
BEAVERBANK RD	916	1
BEAZLEY FIELD	3,048	2
BEAZLEY FIELD--LIGHTS	11,700	9
BED HWY HAM PL RD	36,270	29
BEDFORD & MAIN AVE	46,620	37
BEDFORD HWY & CONVOY RUN	26,190	21
BEDFORD HWY	2,941	2
BEDFORD IND PARK - SIGN	1,560	1
BEDFORD	4,720	4
BEECH HILL RD	3,129	2
BEECHVILLE	4,656	4
BENNETT PARK	7,200	6
BETWEEN SUSSEX & DENTITH	351,972	278
BIRCH COVE LKSD TERR	1,536	1
BIRCH COVE	648	1
BISSETT RD	71,040	56
BOUTILIERS PT RD	624	0
BRIDGEVIEW DR LIGHT	10,430	8
BUS SHELTER LACEWOOD DR TRANSIT MET	10,640	8
BUS SHELTERS TRANSIT TOB	8,820	7
CALDWELL RD	8,640	7
CALEDONIA RD	3,195	3
CAMPBILL CEMETERY	5,475	4
CITY HALL PARADE SQUARE	54,900	43
CLEMENT ST	1,200	1
COBEQUID RD BUS TERMINAL	15,143	12
COGSWELL	185,685	147
COLE HBR RD & HUGH ALLEN	6,682	5
COMMODORE DR LIGHT	84,000	66
COMMODORE DR	92,040	73
COMMONS TENNIS COURT	18,201	14
COMMUNITY CNTR LANE	12,982	10
CONNOLLY RD / SACKVILLE DR	2,661	2
CONROSE PARK	3,602	3
CONVOY RUN	90,270	71
COR BURNSIDE V R SMITH DR	1,521	1
COR HOLLAND AVE	7,200	6
COR OF PORTLAND & ALDERNEY	11,075	9
COR VICTORIA RD/WINDMILL RD	19,020	15
CORNER AGRICOLA SEBASTIAN	9,472	7
CORNER OF MAIN & HARTLEN	10,044	8
CORNER TRUNK 7 BROOKS DR	612	0
CORONATION OLAND CRESCENT DIST 7	598,441	473
CORRECTIONAL CTR BALLFLD	5,600	4
COUNTRYVIEW DR LIGHT	138,650	110
COWIE HILL	1,107	1
CR MAIN & CALEDONIA RD	53,550	42
CRANBERRY CRES	1,800	1
CRN BURNSIDE WRIGHT AVE	3,100	2
CRN-GLLENDALE & METRO	260,040	205
DART SIGN TOP OF ALDERNEY	540	0
DENNIS NAUGLE BALLFIELD	6,010	5
DINGLE FLEMMING PARK	11,949	9
DINGLE RD LIGHT	24,548	19
DIST 1 2750 DUTCH VILLAGE	223,176	176
DIST 1 ST LIGHTS NON-CORE	908,655	718
DIST 18 STR LIGHTS HOLDING ACCOUNT	153,432	121
DIST 18 STREET LIGHTS NON-CORE AREA	326,712	258
DIST 19 STREET LIGHTS NON-CORE	72,816	58
DIST 2 ST LIGHTS NON-CORE AREA	239,892	190
DIST 20 STREET LIGHTS CORE AREA	1,022,304	808
DIST 22 ST LIGHTS CORE AREA	714,792	565
DIST 22 STREET LIGHTS NON-CORE AREA	449,976	355
DIST 23 ST LIGHTS NON-CORE AREA	679,644	537
DIST 3 STREET LIGHTS NON-CORE AREA	811,080	641
DIST 4 STR LIGHTS CORE AREA	644,928	509
DIST 4 WINCH HOUSE TERENCE BAY	257	0
DIST 5 STR LIGHTS CORE	1,135,548	897
DISTRICT 10 RAVINE PK CRE	155,028	122
DISTRICT 3 HERRING CV	243,168	192
DISTRICT 5 BAY RD	359,124	284
DTM SPTPLX COMPOUND-BUS TER MET	17,434	14
DUNBRACK & CONNECTOR	7,365	6
DUNBRACK ST	281,685	223
EISENHAEUER BALL	8,375	7
ELLIOTT ST	66,880	53
FAIRFIELD RD	1,330	1
FAIRVIEW CEMETERY	38,299	30

Lighting Group Name	Electricity (kWh)	
	Total Use	Total eCO2 (t)
FALL RIVER RD RTE#2	7,524	6
FENERTY/FENWOOD	1,162,524	918
FERGUSONS COVE RD	8,712	7
FISH HATCHERY PARK	1	0
FIVE CORNERS SIGN	540	0
FLAT LAKE DR	2,561	2
FLEMMING PARK	21,076	17
FOREST HILL DR	34,536	27
FOREST HILLS & CIRCASSION	8,785	7
FORESTHILL DR & TRUNK 7	22,500	18
FORT NEEDHAM ST	9,980	8
FREDERICK AVE	533	0
GEORGE ST-LOWER END	5,279	4
GLENBOURNE CRT	363,552	287
GLORIA AVE PLAYGROUND	3,591	3
GRAND DESERT	7,224	6
GRANVILLE MALL	30,555	24
GREENWOOD HEIGHTS BALL PARK	1,106	1
HAMMONDS PL & KINGSWOOD	444	0
HARBOURVIEW PARK CEMETARY	768	1
HARTNETT HILL	4,880	4
HATCHETT LK FIRE DPT LITE	1,200	1
HD CHEZZETCOOK	890	1
HENLOCK DR PARK LIGHTS	1,152	1
HIGH TIMBER DR LOT TL	3,120	2
HIGHFIELD & PINECREST-TRANSIT MET	14,032	11
HIGHWAY 101	10,308	8
HIGHWAY 3	16,419	13
HIGHWAY 7	9,602	8
HUBBARDS	624	0
IDA ST	191,184	151
INTERSECTION	2,362	2
ISLEVILLE ST	5,790	5
JAYDEN DR	384	0
JOHN MCNEIL BALLFIELD	177	0
JUBILEE & SACKVILLE DR	4,034	3
JUDGES STAND LAKE BANOOK	5,716	5
KETCH HARBOUR	384	0
LAKE BANOOK	4,370	3
LANDRACE	1,080	1
LARRY UTECK LIGHT	2,104	2
LED TRAFFIC LIGHTS FOR HRM	110,134	87
MACINTOSH ST	190,740	151
MAIN ST	28,620	23
MAYBANK COURT	5,400	4
MEMORIAL PARK	2,328	2
MERV SULLIVAN PK	11,960	9
METROPOLITAN AVE	5,136	4
MILLWOOD DR	2,030	2
MOIRS MILL RD	1,836	1
MORASH PARK	1,800	1
MOUNT HOPE AVE	19,650	16
MYRA RD	3,000	2
NON CORE AREA STLTS	1,045,920	826
NON STREET LIGHTING RESIDUAL	167,166	132
NORTH COMMONS FOUNTAIN	16,870	13
NORTH COMMONS LIGHTS	46,300	37
OLD BEAVERBANK RD	1,350	1
OYSTER POND ST	360	0
PARK RD	8,917	7
PARKING BOOTH	36,080	29
PELZANT ST	2,328	2
PENHORN MALL	408	0
PENHORN MALL TRANSIT MET	15,178	12
PINE ST	3,048	2
PINEHILL PLAY	1,560	1
PLEASANT & BONNAVENTURE	8,012	6
PLEASANT STREET-LAWN BOWLING	2,678	2
POINT PLEASANT DR	1,400	1
POINT PLEASANT PARK	39,275	31
PRATT & WHITNEY DR	72,340	57
PRINCE ALBERT RD	416,748	329
PRINCE ST	112,410	89
RAGGED LAKE	1,560	1
RAVENS CRAIG DR	3,251	3
RENFREW ST	384	0
RIVERSIDE AVENUE	1,392	1
RIVERSIDE DR	408	0
ROMANS AVE PARK LIGHT	1,200	1
ROSS RD	612	0

Lighting Group Name	Electricity (kWh)	
	Total Use	Total eCO2 (t)
ROXHAM CLOSE DIST 8	486,264	384
SACKVILLE HERITAGE PARK	724	1
SHEET HBR (WEST RIVER)	780	1
SHELDRAKE LAKE	1,175	1
SHEPPARDS RUN LIGHTS	768	1
SHIPPYARD RD	33,920	27
SHUBIE CAMPGROUND	1,815	1
SHUBIE CAMPGROUND LIGHTS	10,020	8
SHUBIE PARK POLE #4	216	0
SHUBIE PARK POLE #4A	1,178	1
SHUBIE PARK POLE #4B	2,327	2
SHUBIE PARK POLE #5	4,696	4
SHUBIE PARK POLE #6	933	1
SHUBIE PARK POLE #6A	4,273	3
SHUBIE PARK POLE #6B	3,238	3
SHUBIE PARK POLE #7	10,119	8
SHUBIE PARK POLE #8	4,447	4
SOCIAL HALL	56,772	45
SOUTH PK & UNIVERSITY AVE	9,567	8
STREET LIGHTING	7,336,368	5,796
STREET LIGHTS CORE AREA	2,049,804	1,619
STREET LIGHTS HOLDING ACCOUNT	141,456	112
SULLIVANS POND	106,050	84
THEAKSTON AVE	4	0
TL-111 PORTLAND ST	8,424	7
TL-BAKER RD	29,076	23
TL-PORTLAND ST	8,352	7
TRAFFIC WALK TRK #1 BEAVERBANK RD	2,644	2
TRAFFIC-DART NTHEND OVHD CROSSWALK SIGNS	176,508	139
TRUNK 7 MAGAZINE HILL	408	0
UNION ST	2,868	2
UNIVERSITY AVE	1,800	1
VICTORIA PARK	9,269	7
VICTORIA RD	96,390	76
WALKWAY GLENMORRIS SCH	384	0
WANDERERS GROUNDS	15,202	12
WATER & GEORGE ST	107,160	85
WATER CURTAIN WORKS	400	0
WEST PETPESWICK	2,448	2
WOODLAWN AVE	4,680	4
WRIGHT AVE	98,576	78
WRIGHT/MACDONAL	2,208	2
WYSE BOLAND	780	1
TOTAL	27,097,175	21,407

Buildings

Corporate Inventory

Where estimates were made, assumptions are noted for each relevant building in Appendix B.

Address	Building Name	Electricity (kWh)		Natural Gas (cum)		Fuel Oil (L)		Diesel (L)		Total eCO ₂ (t)
		Total Use (t)	Total eCO ₂ (t)	Total Use (t)	Total eCO ₂ (t)	Total Use (t)	Total eCO ₂ (t)	Total Use (t)	Total eCO ₂ (t)	
1 METROPOLITAN AVE	Fire Station # 9	138,070	110	0	0	18,864	53	0	0	0
1 SECOND ST	Fire Station # 14	29,160	23	0	0	11,035	31	0	0	0
10 KIDSTON RD	Captain William Spry Community Centre	768,193	607	0	0	159,522	451	0	0	0
10 THORNHILL DR UNIT #2	Police Satellite Office	57,520	45	0	0	5,238	15	0	0	0
1018 FALL RIVER RD	Fall River West School	14,017	11	0	0	35,058	99	0	0	0
10353 HIGHWAY 3	JD Stratford Library	39,160	31	0	0	5,069	14	0	0	0
1070 OLD SAMBRO RD	Fire Station # 62	32,750	26	0	0	0	0	0	0	0
11 STATION RD	Head of St. Margaret's Bay Community Centre	39,540	31	0	0	153,340	434	0	0	0
11 TURNER DR	Turner Drive Depot	502,352	397	0	0	5,474	15	0	0	0
11 WINDMILL RD	Halifax Regional Police	3,995	3	0	0	745	2	0	0	0
110 WYSE RD	Dartmouth Sportsplex	3,052,742	2,412	377,880	745	0	0	0	0	0
111 CLAYTON PARK DR	Northcliffe Recreation Centre	394,040	311	0	0	124,068	351	0	0	0
111 DRYSDALE RD	Spryfield Lions Arena	942,206	744	0	0	12,185	34	0	0	0
11229 HIGHWAY 333	Fire Station # 55	40,786	32	0	0	6,460	18	0	0	0
1138 OLD SAMBRO RD	Harristfield/Williamiswood Community Centre	30,909	24	0	0	8,301	23	0	0	0
114 WOODLAWN RD	Woodlawn Library	89,760	71	0	0	0	0	0	0	0
1150 COLE HARBOUR RD	Fire Station # 17	283,377	224	0	0	5,964	17	0	0	0
1156 SACKVILLE DR	Fire Station # 10	69,570	55	0	0	11,764	33	0	0	0
12 WESTWOOD BLVD	St. Margaret's Centre	1,978,800	1,563	0	0	88,152	249	0	0	0
12131215 COLE HARBOUR RD	Cole Harbour Activity Centre	8,322	7	0	0	5,963	17	0	0	0
12390 HWY 224	Musquashon Valley Bicentennial Theatre & Cultural Centre	22,075	17	0	0	15,810	45	0	0	0
1347 BEDFORD HWY	Fire House Youth Centre	17,786	14	0	0	16,799	48	0	0	0
1300 ST MARGARETS BA RD	Enviro-Care	11,709	9	0	0	11,988	34	0	0	0
134 PINECREST DR	Dartmouth North Community Centre	300,627	237	21,467	41	0	0	0	0	0
1359 FALL RIVER RD	Gordon R. Snow Community Centre & Fire Station # 45	364,875	388	0	0	0	0	0	0	0
14 HIGHWAY 336	Fire Station # 39	23,959	19	0	0	7,240	20	0	0	0
14 PURCELLS COVE RD	Chocolate Lake Community Recreation Centre	85,080	67	0	0	28,521	81	0	0	0
142 BEDFORD HWY	Queen Street Apartments (Transition)	17,700	14	0	0	5,116	14	0	0	0
1452 QUEEN ST	Beechville Lakeside Timberlea Recreation Centre	3,086	2	0	0	0	0	0	0	0
1492 ST MARGARETS BAY RD	Bedford Tower	60,400	48	0	0	23,001	65	0	0	0
1496 BEDFORD HWY	Fire Station # 8	59,175	47	0	0	0	0	0	0	0
15 CONVOY RUN	Fire Station # 8	199,880	158	0	0	27,059	77	0	0	0
15 FORT SACKVILLE RD	Scott Manor - Fort Sackville Manor House	15,399	12	0	0	6,960	20	0	0	0
15 MONIQUE	Gerald B. Giny Arena	719,600	568	0	0	14,294	40	0	0	0
15 RAGUS RD	Bowles Arena	757,200	595	0	0	9,656	27	0	0	0
150 THORNHILL DR	Thornhill Transit Facility	522,936	413	82,758	157	0	0	0	0	0
15740 HIGHWAY 7	Fire Station # 31	10,401	8	0	0	3,623	10	0	0	0
1581 BEAVERBANK RD	Fire Station # 48	182,759	144	0	0	47,812	135	0	0	0
1588 BARRINGTON ST	Khyber Building	17,480	14	0	0	12,219	35	0	0	0
160 WEST PENNANT RD	Fire Station # 63	14,395	11	0	0	1,982	6	0	0	0
1606 Bell Road	Public Gardens Greenhouse & Power House	100,360	79	0	0	0	0	0	0	0
1641 FAIRFIELD RD	St. Mary's Boat Club	64,320	51	0	0	11,088	31	0	0	0
1680 BELL RD	Wanderer's Grounds Parks Depot	103,580	82	27,684	52	12,715	36	0	0	0

Address	Building Name	Electricity (kWh)		Natural Gas (cum)		Fuel Oil (L)		Diesel (L)	
		Total Use	Total eCO2 (t)	Total Use	Total eCO2 (t)	Total Use	Total eCO2 (t)	Total Use	Total eCO2 (t)
17 CONRAD RD	St. Theresa Community Centre	10,617	8			5,267	15		0
171 OAKMOUNT DR	HRM Admin Bldg/Salt Dome/Garage	116,180	92			65,535	185		0
17559 HIGHWAY 7	Fire Station # 30	38,948	31			5,896	17		0
1765 OSTREA LAKE	Fire Station # 25	18,829	15			4,220	12		0
1800 BEDFORD HWY	Bedford Leisure Centre	16,275	13			5,707	15		0
1807 CALDWELL RD	Fire Station # 16	241,120	190			24,890	70		0
182 STONEWICK CROSS	Stoneveik Residential Building (Transition)	1,766	1				0		0
1841 ARGYLE ST	Halifax City Hall	388,561	305			67,235	199		0
191 JOSEPH ZATZMAN DR UNIT #3-4	Joseph Zatzman Dr. Bldg (Corporate Administration)	23,400	18			3,483	10		0
1929 ROBBIE ST	Queen Elizabeth High School	77,038	61			146,951	416		0
1955 TROLLOPE ST	Citadel Community Centre	21,703	17			28,116	80		0
196 WAVERLEY RD	Waverly Road Fire Garage	108,240	86				0		0
1970 GOTTINGEN ST	Centennial Pool	567,440	448			136,842	387		0
1975 GOTTINGEN ST	Halifax Regional Police Headquarters	1,818,600	1,432			225,542	638		0
2 CHAPMAN ST	Northbrook Police Training Centre	301,288	238	39,450	75		0		0
2 LOCHERLONEY ST	Alderney Landings	667,214	527	59,282	112	18,305	52		0
200 ILSLEY AVE	Isley Transit Facility	4,084,553	3,227	630,899	1,193		0		0
202 BROWNLOW AVE	Storage Facility	81,775	65				0		0
2040 OLD GUYSBOROUGH RD	Fire Station # 47	23,842	19			13,682	39		0
2050 HAMMONDS PLAINS RD	Fire Station # 50	78,120	62			9,130	26		0
21 MOUNT HOPE AVE	Eric Spicer Municipal Building	1,991,890	1,574			130,187	368		0
2101 PROSPECT RD	Fire Station # 52	26,905	21			8,580	24		0
213 BISSETT RD	Works Depot	81,696	65			18,260	52		0
22 LAKESIDE DR	Fire Station # 43	23,461	19			8,823	25		0
22 POWERS RD	Fire Station # 34	40,238	32			7,605	22		0
22404 HIGHWAY 7	Macphee House	5,773	5			1,327	4		0
2335 HIGHWAY 7	Fire Station # 38	25,545	20			13,688	39		0
2335 GOTTINGEN ST	Halifax North Memorial Public Library	521,400	412				0		0
230 PLEASANT ST	North Woodside Community Centre	129,674	102			36,262	74		0
2385 CROWELL RD	Fire Station # 19	30,243	24				0		0
24 BROOKS DR	East Preston Recreation Centre	67,222	53			16,740	47		0
24 GOVERNMENT WHARF RD	Visitor Information Centre	1,150	1				0		0
240 DINGLE RD	Flemming Park Buildings	16,020	13			2,309	6		0
2433 HIGHWAY 2 (LAKE THOMAS DR)	Fire Station # 41	33,289	26			12,600	36		0
245 HERRING COVE RD	Fire Station # 6	36,380	29			12,266	35		0
2501 GOTTINGEN ST	George Dixon Centre	107,920	85			12,753	36		0
25715 HWY 7 DUFFERIN	Samuel R. Balcom Community Centre	10,219	8			8,256	23		0
2578 WEST SHIP HARBOUR ROAD	Fire Station # 27	744	3				0		0
26 ELLIOT ST	Finlay Community Centre	80,828	64			31,564	89		0
26 MYRA RD	Fire Station # 58	64,969	51			13,292	38		0
26 NEWCASTLE ST	Essex Green House Park - Alexander James	14,003	11			10,323	29		0
26291 HIGHWAY 7	Fire Station # 33	10,517	8			2,173	6		0
27 VIMY AVE	Centennial Arena	1,061,268	838			51,762	146		0
2748, 2786 AGRICOLA ST, 2773 Robie St	Bloomfield Centre	245,460	194			146,081	413		0
28971 HIGHWAY 7	Fire Station # 29	39,520	31			13,027	37		0
28975 HIGHWAY 7	Moser River Community Centre	50,190	40				0		0
2901 WINDSOR ST	Halifax Forum	2,050,328	1,620			246,949	699		0
2931 LAWRENCE TOWN RD	Fire Station # 20	27,143	21			5,343	15		0
30 JOHN BRENTON DR	Shubie Park Canteen Building	38,978	31				0		0
3035 HIGHWAY 7	Fire Station # 21	38,383	30			9,555	27		0
3168 HIGHWAY 7	Leake Echo Community Centre	89,833	71			4,610	13		0
3182 HIGHWAY 2	Fall River Recreation Centre (Transition)	7,127	6			5,989	17		0

Address	Building Name	Electricity (kWh)		Natural Gas (cum)		Fuel Oil (L)		Total eCO2	
		Total Use (t)	Total eCO2 (t)	Total Use (t)	Total eCO2 (t)	Total Use (t)	Total eCO2 (t)	Total Use (t)	Total eCO2 (t)
32 GLENDALE AVE	Glendale Library	28,800	23	0	0	9,940	38	0	0
32 RIVERSIDE AVE	Fire Station # 24	29,598	23	0	0	12,338	35	0	0
3214 LAKE THOMAS DR (Hwy 2)	Fire Station # 45	24,084	19	0	0	3,746	11	0	0
33 CRICHTON AVE	Crichton Centre	44,160	35	0	0	8,430	24	0	0
330 LACEWOOD DR	Keshen Goodman Library	645,600	510	0	0	54,839	158	0	0
331 PLEASANT ST	Fire Station # 15	27,450	22	8,978	17	2,337	7	0	0
3372 DEVONSHIRE AVE	Needham Community Recreation Centre	246,240	195	0	0	71,790	203	0	0
3380 DEVONSHIRE AVE	Richmond Family Court	367,084	290	0	0	39,897	113	0	0
3395 DEVONSHIRE AVE	Devonshire Arena	25,111	20	0	0	15,316	43	0	0
36 HOLLAND AVE	Dr. Gerald J. LeBraum Memorial Centre	959,880	758	0	0	13,954	39	0	0
3610 PROSPECT RD	Fire Station # 54	58,620	46	0	0	0	0	0	0
3646 HAMMONDS PLAINS ROAD	Tannalton Library	293,525	232	0	0	39,038	116	0	0
375 COMIE HILL EXT DR	HRM Parks and Grounds Depot	291,040	230	0	0	71,716	203	0	0
3790 MACKINTOSH ST	Mackintosh Street Maintenance Services	87,119	69	0	0	30,768	87	0	0
3825 MACKINTOSH ST	Public Works Building	490,080	387	0	0	95,936	272	0	0
39 CORBETT RD	Fire Station # 35	24,117	19	142,871	270	13,571	38	0	0
40 & 60 ALDERNEY DR	Aldemey Gate	2,608,736	2,061	0	0	0	0	0	0
4032 MOOSELAND RD	Fire Station # 32	8,423	7	0	0	0	0	0	0
4097 GLENDALE AVE	Sackville Sports Stadium	3,023,941	2,589	0	0	212,935	603	0	0
4132 HIGHWAY 2	Fire Station # 42	35,654	28	0	0	11,033	31	0	0
429 COBEQUID RD	Cobequid Road Municipal Operations Facility	46,717	37	0	0	14,637	41	0	0
43 WENTWORTH ST	Feeding Others of Dartmouth	0	0	0	0	4,159	12	0	0
44 SIMMONDS RD	North Preston Community Centre	301,600	159	0	0	29,760	84	0	0
4408 ST MARGARETS BAY RD	Fire Station # 59	33,844	27	0	0	25,776	73	0	0
4413 HWY 357 MEAGHERS GRANT	Fire Station # 36	25,402	18	0	0	12,502	35	0	0
45 CONNOLLY RD	Sackville Heights Community Centre	121,360	96	0	0	21,522	61	0	0
45 HIGHFIELD PARK DR	Fire Station # 12	214,380	169	0	0	45,499	129	0	0
45 KNIGHTSRIDGE DR	Fire Station # 7	142,932	113	0	0	71,355	202	0	0
45 OCHTERLONEY ST	Dartmouth Seniors Centre	191,520	151	0	0	30,691	87	0	0
46 LAKECREST DR	Lakecrest Community Shop	2,043	2	0	0	5,305	15	0	0
47 WENTWORTH ST	Grace Hiltz (Transition)	6,480	5	0	0	7,318	21	0	0
479 PATTON RD	Fire Station # 11	35,750	27	0	0	17,405	49	0	0
50 CALEDONIA RD	East Dartmouth Community Centre	313,560	248	0	0	0	0	0	0
5077 GEORGE ST	Halifax Ferry Terminal	300,540	237	0	0	30,303	86	0	0
51 FOREST HILLS PKY	Cole Harbour Place	3,768,480	2,977	0	0	355,811	1,007	0	0
5251 DUKE ST	Fire Station # 26	39,020	31	0	0	9,343	26	0	0
5284 DUKE ST	Duke Tower, Floors 3 & 4	227,600	180	0	0	40,502	115	0	0
5381 SPRING GARDEN RD	Halifax Mem Centre	6,594,048	5,209	0	0	260,017	736	0	0
54 LOCKS RD	Spring Garden Road Public Library	344,960	273	0	0	71,469	202	0	0
5543 HIGHWAY 7	Fairbanks Centre	146,809	116	0	0	0	0	0	0
5663 WEST ST	Fire Station # 23	52,668	42	0	0	18,792	53	0	0
5680 ST MARGARETS BAY RD	Fire Station # 57	146,040	115	0	0	58,124	164	0	0
57 KETCH HARBOUR RD	Fire Station # 60	4,500	4	0	0	4,721	13	0	0
57 OCHTERLONEY ST	Fire Station # 3	26,840	21	0	0	6,011	17	0	0
5711 SACKVILLE ST	Quaker House Museum	6,525	5	0	0	0	0	0	0
5718 POINT PLEASANT DR	Wanders Grounds greenhouses, sheds, furnace building, header house	8,786	7	0	0	68,106	193	0	0
5753 SACKVILLE ST	Public Pleasant Building #7	42,725	34	0	0	7,628	22	0	0
5802 HWY 357 (ELDERBANK)	Public Gardens greenhouses, dry canteen	108,845	86	0	0	0	0	0	0
5816 COGSWELL ST	Fire Station # 37	23,131	18	0	0	0	0	0	0
5816 CUNARD ST	The Commons Pavilion	32,760	26	0	0	12,914	37	0	0
	North Commons	3,891	3	0	0	0	0	0	0

Address	Building Name	Electricity (kWh)		Natural Gas (cum)		Fuel Oil (L)		Diesel (L)		Total eCO2 (t)
		Total Use	Total eCO2 (t)	Total Use	Total eCO2 (t)	Total Use	Total eCO2 (t)	Total Use	Total eCO2 (t)	
5830 LADY HAMMOND RD (DUFFUS ST)	Fire Station # 4	77,820	61			28,231	80			0
596 LUCASVILLE RD	Wallace Lucas Community Centre	17,465	14			7,335	21			0
5988 UNIVERSITY AVE	Fire Station # 2	97,470	77			21,450	61			0
600 HIGHWAY 277	Fire Station # 40	10,238	8			8,930	25			0
62 CALLEDONIA RD	Beazley Park	91,688	72			28,590	81			0
636 SACKVILLE DR	Acadia School/Sackville Public Library	617,530	488			17,818	50			0
6691 FOURTH ST	Larry O'Connell Centre	5,348	4			5,661	16			0
683 PARKHILL RD	Adventure Earth Centre	6,614	5			9,496	27			0
6890 CHEBUCTO RD	Residences (Transition)	10,190	8							0
690 MAIN ST (HWY 7)	Fire Station # 18	60,420	48			12,154	34			0
6955 BAYERS RD	St. Andrews Community Recreation Centre	98,000	77			34,746	98			0
7 WALKER AVE	Sackville Metro Link	213,120	168							0
7990 BAYERS RD	Fire Station # 5	42,300	33			18,283	52			0
711 POCKWOCK RD	Upper Hammonds Plains Community Centre	40,368	32			8,669	25			0
7900 HIGHWAY 7	Musquodoboit Harbour Public Library	143,960	114			8,446	24			0
8 CAIN ST	Fire Station # 22	19,786	16			2,368	7			0
80 GRONO RD	Riverline Community Centre	15,665	12			3,049	23			0
80 SANDY COVE RD	Fire Station # 53	70,320	56							0
81 ILSLEY AVE	Corporate Administration	212,525	168			7,049	20			0
843 FALL RIVER RD	Fire Station # 44	37,446	30			9,938	28			0
8579 ST MARGARETS BAY RD	Fire Station # 56	68,664	54			27,133	77			0
866 KING ST	Fire Station # 13	58,260	46			46,935	133			0
866 PORTLAND ST	Pontland Hills Transit Facility	127,826	101							0
88 ALDERNEY DR	Dartmouth Ferry Terminal	500,518	395	75,764		22,812	65			0
88A CRICHTON AVE/ 20 BOATHOUSE LANE	Oakwood House	6,403	5			5,483	16			0
9 ATLANTIC ST	Woodside Ferry Terminal	279,680	221			37,690	107			0
9 SPRING ST	Bedford Teachers	5,855	5			5,252	15			0
90 ALDERNEY DR	Halifax Regional School Board Offices	639,700	505	46,123		6,074	17			0
947 MITCHELL ST	Environmental Depot	60,375	38			10,055	28			0
948 POCKWOCK RD	Fire Station # 51	18,097	14			8,648	24			0
964 KETCH HARBOUR	Fire Station # 61	11,553	9			3,456	10			0
EMERGENCY GENERATORS	Multiple Locations		0				0			41,949
Total		54,238,748	42,849	1,513,155	2,861	4,874,644	13,795	41,949	13,795	115

APPENDIX B: ASSUMPTIONS FOR ESTIMATES

ADDRESS	BUILDING NAME	POWER (KWH)	HEATING FUEL (L)	NATURAL GAS (CUM)
1 METROPOLITAN AVE	Fire Station # 9	138,670	18,864	
1 SECOND ST	Fire Station #14	29,160	11,035	
10 KIDSTON RD	Captain William Spry Community Centre	768,193	159,522	
10 THORNHILL DR UNIT #2	Police Satellite Office	57,520		
1018 FALL RIVER RD	Fall River West School	14,017	5,238	
10353 HIGHWAY 3	JD Shatford Library	39,160	35,058*	
1070 OLD SAMBRO RD	Fire Station # 62	32,750	5,069	
11 STATION RD	Head of St. Margaret's Bay Community Centre	39,240		
11 TURNER DR	Turner Drive Depot	502,352	153,340	
11 WINDMILL RD	Halifax Regional Police	3,995	5,474	
110 WYSE RD	Dartmouth Sportsplex	3,052,742		377,880
111 CLAYTON PARK DR	Northcliffe Recreation Centre	394,040	124,068	
111 DRYSDALE RD	Spryfield Lions Arena	942,206*	12,185*	
11229 HIGHWAY 333	Fire Station # 55	40,786	6,460	
1138 OLD SAMBRO RD	Harrietsfield/Williamswood Community Centre	30,909	8,301	
114 WOODLAWN RD	Woodlawn Library	89,760		
1150 COLE HARBOUR RD	Fire Station #17	283,577	5,964	
1156 SACKVILLE DR	Fire Station #10	69,570	11,764 ^R	
12 WESTWOOD BLVD	St. Margarets Centre	1,978,800*	88,152*	
1213/1215 COLE HARBOUR RD	Cole Harbour Activity Centre	8,322	5,963	
12390 HWY 224	Musquodoboit Valley Bicentennial Theatre & Cultural Centre	22,075**	15,810**	
1247 BEDFORD HWY	Fire House Youth Centre	17,786	16,799	
1300 ST MARGARETS BA RD	Enviro-Care	11,709	11,988	
134 PINECREST DR	Dartmouth North Community Centre	300,627*		21,467
1359 FALL RIVER RD	Gordon R. Snow Community Centre & Fire Station # 45	364,875		
14 HIGHWAY 336	Fire Station # 39	23,959	7,240	
14 PURCELLS COVE RD	Chocolate Lake Community Recreation Centre	85,080	28,521	
142 BEDFORD HWY		17,700	5,116	
1452 QUEEN ST	Queen Street Apartments (Transition)	3,086		
1492 ST MARGARETS BAY RD	Beechville Lakeside Timberlea Recreation Centre	60,400	23,001	
1496 BEDFORD HWY	Bedford Tower	59,175		
15 CONVOY RUN	Fire Station #8	199,980	27,059	
15 FORT SACKVILLE RD	Scott Manor - Fort Sackville Manor House	15,299	6,960	
15 MONIQUE	Gerald B. Gray Arena	719,600	14,294	
15 RAGUS RD	Bowles Arena	757,200	9,656*	
150 THORNHILL DR	Thornhill Transit Facility	522,936		82,758
15750 HIGHWAY 7	Fire Station # 31	10,401	3,623	
1581 BEAVERBANK RD	Fire Station # 48	182,759	47,812	
1588 BARRINGTON ST	Khyber Building	17,480	12,219	
160 WEST PENNANT RD	Fire Station # 63	14,395	1,982	
1606 Bell Road	Public Gardens Greenhouse & Power House	100,360		
1641 FAIRFIELD RD	St. Mary's Boat Club	64,320	11,088**	
1680 BELL RD	Wanderer's Grounds Parks Depot	103,580	12,715	27,684
17 CONRAD RD	St. Therese Community Centre	10,617***	5,267	
171 OAKMOUNT DR	HRM Admin Bldg/Salt Dome/Garage	116,180	65,535	
17559 HIGHWAY 7	Fire Station # 30	38,948	5,896	
1765 OSTREA LAKE	Fire Station # 25	18,829	4,220	
1800 BEDFORD HWY	Bedford Leisure Centre	16,275	5,707	
1807 CALDWELL RD	Fire Station # 16	241,120	24,890**	
182 STONEWICK CROSS	Stonewick Residential Building (Transition)	1,766		
1841 ARGYLE ST	Halifax City Hall	588,561	67,235	
191 JOSEPH ZATZMAN DR UNIT #3-4	Joseph Zatman Dr. Bldg (Corporate Administration)	23,400	3,483	
1929 ROBIE ST	Queen Elizabeth High School	77,028	146,951	
1955 TROLLOPE ST	Citadel Community Centre	21,703 ^A	28,116 ^A	
196 WAVERLEY RD	Waverly Road Fire Garage	108,240		
1970 GOTTINGEN ST	Centennial Pool	567,440	136,842*	

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** 2007 data used. Fuel numbers adjusted by accounting for Heating Degree Days in 2007 vs 2008.

*** Based on amount spent for electricity, and compared to power cost and kWh for building of similar size and use

^A Based on building of similar size and use.

! Based on 2003 estimate and assumes 2/3 the cost of electricity.

ADDRESS	BUILDING NAME	POWER (KWH)	HEATING FUEL (L)	NATURAL GAS (CUM)
1975 GOTTINGEN ST	Halifax Regional Police Headquarters	1,818,600	225,542	
2 CHAPMAN ST	Northbrook Police Training Centre	301,288		39,450
2 OCHTERLONEY ST	Alderney Landing	667,214***	18,305	59,282
200 ILSLEY AVE	Ilsley Transit Facility	4,084,553		630,899
202 BROWNLOW AVE	Storage Facility	81,775		
2040 OLD GUYSBOROUGH RD	Fire Station # 47	23,842	13,682	
2050 HAMMONDS PLAINS RD	Fire Station # 50	78,120	9,130	
21 MOUNT HOPE AVE	Eric Spicer Municipal Building	1,991,890	130,187	
2101 PROSPECT RD	Fire Station # 52	26,905	8,380	
213 BISSETT RD	Works Depot	81,696***	18,260	
22 LAKESIDE DR	Fire Station # 43	23,461	8,823	
22 POWERS RD	Fire Station # 34	40,238	7,605	
22404 HIGHWAY 7	Macphee House	5,773	1,327	
22835 HIGHWAY 7	Fire Station # 28	25,545	13,688	
2285 GOTTINGEN ST	Halifax North Memorial Public Library	521,400		
230 PLEASANT ST	North Woodside Community Centre	129,674 [^]	26,262	
2385 CROWELL RD	Fire Station # 19	30,243		
24 BROOKS DR	East Preston Recreation Centre	67,222	16,740	
24 GOVERNMENT WHARF RD	Visitor Information Centre	1,150		
240 DINGLE RD	Flemming Park Buildings	16,020	2,209	
2433 HIGHWAY 2 (LAKE THOMAS DR)	Fire Station # 41	33,289	12,600	
245 HERRING COVE RD	Fire Station # 6	36,280	12,266	
2501 GOTTINGEN ST	George Dixen Centre	107,920	12,753	
25718 HWY 7 DUFFERIN	Samuel R Balcorn Community Centre	10,219***	8,256	
2578 WEST SHIP HARBOUR ROAD	Fire Station # 27	744 ^R		
26 ELLIOT ST	Findlay Community Centre	80,828***	31,564	
26 MYRA RD	Fire Station # 58	64,969	13,292	
26 NEWCASTLE ST	Evergreen House Park - Alexander James	14,003	10,323	
26291 HIGHWAY 7	Fire Station # 33	10,517	2,173	
27 VIMY AVE	Centennial Arena	1,061,268	51,762*	
2748, 2786 AGRICOLA ST/ 2773 Robie St	Bloomfield Centre	245,460	146,051	
28971 HIGHWAY 7	Fire Station # 29	39,520	13,027	
28975 HIGHWAY 7	Moser River Community Centre	50,190		
2901 WINDSOR ST	Halifax Forum	2,050,328	246,949**	
2931 LAWRENCETOWN RD	Fire Station # 20	27,143	5,343	
30 JOHN BRENTON DR	Shubie Park Canteen Building	38,978		
3035 HIGHWAY 7	Fire Station # 21	38,383	9,555	
3168 HIGHWAY 7	Lake Echo Community Centre	89,833***	4,610	
3182 HIGHWAY 2	Fall River Recreation Centre (Transition)	7,127	5,989	
32 GLENDALE AVE	Glendale Library	28,800	9,940*	
32 RIVERSIDE AVE	Fire Station # 24	29,598	12,358	
3214 LAKE THOMAS DR (Hwy 2)	Fire Station # 45	24,084	3,746	
33 CRICHTON AVE	Crichton Centre	44,160	8,430	
330 LACEWOOD DR	Keshen Goodman Library	645,600	54,839*	
331 PLEASANT ST	Fire Station # 15	27,450 ^R	2,337	8,978
3372 DEVONSHIRE AVE	Needham Community Recreation Centre	246,240	71,790	
3380 DEVONSHIRE AVE	Richmond Family Court		39,897	
3395 DEVONSHIRE AVE	Devonshire Arena	367,084	33,490	
36 GLENMORE RD	Fire Station # 38	25,111	15,316	
36 HOLLAND AVE	Dr. Gerald J. LeBrun Memorial Centre	959,880	13,954	
3610 PROSPECT RD	Fire Station # 54	58,620		
3646 HAMMONDS PLAINS ROAD	Tantallon Library	293,525	39,038**	
375 COWIE HILL EXT DR	HRM Parks and Grounds Depot	291,040	71,716	
3790 MACKINTOSH ST	Mackintosh Street Maintenance Services	87,119	30,768	
3825 MACKINTOSH ST	Public Works Building	490,080	95,936	
39 CORBETT RD	Fire Station # 35	24,117	13,571	
40 & 60 ALDERNEY DR	Alderney Gate	2,608,726		142,871
4032 MOOSELAND RD	Fire Station # 32	8,423		
409 GLENDALE AVE	Sackville Sports Stadium	3,023,941*	212,935*	
4132 HIGHWAY 2	Fire Station # 42	35,654	11,033	
429 COBEQUID RD	Cobequid Road Municipal Operations Facility	46,717	14,637	
43 WENTWORTH ST	Feeding Others of Dartmouth		4,159	
44 SIMMONDS RD	North Preston Community Centre	201,600	29,760	

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[^] Based on building of similar size and use.

! Based on 2003 estimate and assumes 2/3 the cost of electricity.

ADDRESS	BUILDING NAME	POWER (KWH)	HEATING FUEL (L)	NATURAL GAS (CUM)
4408 ST MARGARETS BAY RD	Fire Station # 59	33,844	25,776	
4413 HWY 357 MEAGHERS GRANT	Fire Station # 36	23,402 ^R	12,502	
45 CONNOLLY RD	Sackville Heights Community Centre	121,360	21,522	
45 HIGHFIELD PARK DR	Fire Station # 12	214,380	45,499	
45 KNIGHTSRIDGE DR	Fire Station # 7	142,932	71,355	
45 OCHTERLONEY ST	Dartmouth Seniors Centre	191,520	30,691 ^{**}	
46 LAKECREST DR	Lakecrest Carpentry Shop	6,480	5,305	
47 WENTWORTH ST	Grace Hillz (Transition)	2,043	7,318	
479 PATTON RD	Fire Station # 11	33,750	17,405	
50 CALEDONIA RD	East Dartmouth Community Centre	313,560		
5077 GEORGE ST	Halifax Ferry Terminal	300,540	30,303	
51 FOREST HILLS PKY	Cole Harbour Place	3,768,480*	355,811*	
51 OLD TRUNK RD	Fire Station # 26	39,020	9,343	
5251 DUKE ST	Duke Tower, Floors 3 & 4	227,600!	40,502*	
5284 DUKE ST	Halifax Metro Centre	6,594,048 ^{**}	260,017 ^{**}	
5381 SPRING GARDEN RD	Spring Garden Road Public Library	344,960	71,469*	
54 LOCKS RD	Fairbanks Centre	146,809		
5543 HIGHWAY 7	Fire Station # 23	52,668	18,792	
5663 WEST ST	Fire Station # 3	146,040	58,124	
5680 ST MARGARETS BAY RD	Fire Station # 57	4,590	4,721	
57 KETCH HARBOUR RD	Fire Station # 60	26,840 ^{**}	6,011	
57 OCHTERLONEY ST	Quaker House Museum	6,525		
5711 SACKVILLE ST	Wanders Grounds greenhouses, sheds, furnace room building, header house	8,786	68,106	
5718 POINT PLEASANT DR	Point Pleasant Building #7	42,725	7,628	
5753 SACKVILLE ST	Public Gardens greenhouses, dry canteen	108,845		
5802 HWY 357 (ELDERBANK)	Fire Station # 37	23,131		
5816 COGSWELL ST	The Commons Pavillion	32,760	12,914	
5816 CUNARD ST	North Commons	3,891		
5830 LADY HAMMOND RD (DUFFUS ST)	Fire Station # 4	77,820	28,231	
596 LUCASVILLE RD	Wallace Lucas Community Centre	17,465	7,335	
5988 UNIVERSITY AVE	Fire Station # 2	97,470	21,450	
600 HIGHWAY 277	Fire Station # 40	10,428	8,930	
62 CALEDONIA RD	Beazley Park	91,688	28,590	
636 SACKVILLE DR	Acadia School/Sackville Public Library	617,520	17,818	
6691 FOURTH ST	Larry O'Connell Centre	5,348	5,661	
68 PARKHILL RD	Adventure Earth Centre	6,614	9,496	
6890 CHEBUCTO RD	Residence (Transition)	10,190		
690 MAIN ST (HWY 7)	Fire Station # 18	60,420	12,154	
6955 BAYERS RD	St. Andrews Community Recreation Centre	98,000	34,746	
7 WALKER AVE	Sackville Metro Link	213,120		
7090 BAYERS RD	Fire Station # 5	42,300	18,283	
711 POCKWOCK RD	Upper Hammonds Plains Community Centre	40,368	8,669	
7900 HIGHWAY 7	Musquodoboit Harbour Public Library	143,960	8,440 ^{**}	
8 CAIN ST	Fire Station # 22	19,786	2,368	
80 GRONO RD	Riverline Community Centre	15,665	8,049	
80 SANDY COVE RD	Fire Station # 53	70,320		
81 ILSLEY AVE	Corporate Administration	212,525	7,049	
843 FALL RIVER RD	Fire Station # 44	37,446	9,938	
8579 ST MARGARETS BAY RD	Fire Station # 56	68,664	27,133	
86 KING ST	Fire Station # 13	58,260	46,935	
866 PORTLAND ST	Portland Hills Transit Facility	127,826		
88 ALDERNEY DR	Dartmouth Ferry Terminal	500,518	22,812	75,764
88A CRICHTON AVE/ 20 BOATHOUSE LANE	Oakwood House	6,403 [^]	5,483	
9 ATLANTIC ST	Woodside Ferry Terminal	279,680	37,690	
9 SPRING ST	Bedford Teachery	5,855	5,252	
90 ALDERNEY DR	Halifax Regional School Board Offices	639,700 ^{***}	6,074	46,123
947 MITCHELL ST	Environmental Depot	60,375	10,055	
948 POCKWOCK RD	Fire Station # 51	18,097	8,648	
964 KETCH HARBOUR	Fire Station # 61	11,553	3,456	

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