

14

CORPORATE ENERGY REPORT 2011

The Finance and Administration Committee recommends the adoption of the recommendation contained in the following report dated May 9, 2012, from the Commissioner of Corporate Services.

1. RECOMMENDATION

It is recommended that this report be received for information.

2. PURPOSE

This report is an annual update on Regional corporate energy and greenhouse gas management activities.

3. BACKGROUND

This report meets the energy reporting requirements of the Sustainability Strategy and the Corporate Air Quality Strategy

Since 2003, the Property Services Branch of the Corporate Services Department has been mandated to implement and report annually on energy cost reduction initiatives across Regional buildings and operations.

The energy management program and this Corporate Energy Report support a number of principles and actions in the York Region *Sustainability Strategy (2007)*, including the following:

- Build Regional buildings at a minimum LEED Silver level as directed by Council.
- Continue to increase the energy efficiency and sustainability of York Region buildings through retrofits, procurement and conservation measures.
- Reduce greenhouse gas emissions in existing and future Regional facilities.
- Expand on energy efficiency initiatives and pursue other forms of renewable energy.
- Track energy performance and costs across the Region on an annual basis, and monitor greenhouse gas emissions corporate-wide.

The reporting requirements of the *Corporate Air Quality Strategy (2008)* greatly mirror the content of the Corporate Energy Report, therefore, the two mandates have been combined into this single annual report under the direction of the Property Services Branch to maximize efficiencies and expertise.

This report is designed to also meet the energy reporting requirements of Ontario's *Green Energy Act*

Ontario Regulation 397/11, made under the *Green Energy Act, 2009* and published on August 25, 2011, requires all public agencies to prepare an Energy Conservation and Demand Management Plan ("the Energy Plan"). The Energy Plan has two parts:

- A listing of the annual energy consumption and greenhouse gas emissions for each of the public agency's facilities. The first listing is due by July 1, 2013 for the 2011 calendar year, and is due annually thereafter.
- A description of previous, current and proposed measures for reducing the public agency's energy consumption, and a forecast of expected results. The first description is due July 1, 2014, and is due every five years thereafter.

Following consultation with the Ministry of Energy, *Attachment 1* of this report was designed to meet the first, energy reporting component of the Energy Plan a year early, and to provide Property Services with a foundation for leading a cross-departmental conservation planning exercise in 2012/2013 that will fulfill the second part of the Energy Plan described above.

Similar requirements relating to public agency water use were one aspect of the *Water Opportunities and Water Conservation Act, 2010* (WOWCA), but no Regulations have been published yet. The Property Services Branch continues to enhance the Corporate Energy Report to include the anticipated reporting requirements of this Act. WOWCA also has water quality and community water conservation aspects that will be managed by the Environmental Services Department.

In 2011, Regional energy costs totalled \$39.7 million and greenhouse gas emissions totalled 77,000 tonnes

Corporate energy costs were \$39.7 million in 2011. As illustrated in Figure 1 and detailed in *Attachment 2*, fleets represented 59% of the total, Environmental Services electricity (particularly water and wastewater operations) was 19% and all other facilities including Housing York Inc. and street and traffic lighting was 22%.

In terms of greenhouse gases (GHGs), total emissions were 77,000 tonnes of carbon dioxide equivalent (CO₂e) in 2011, which is approximately equal to the emissions from 15,400 light passenger vehicles for a year. The distribution of GHGs by end-use, as shown in Figure 2, was similar to the energy cost allocation but with somewhat more contribution from fleets and less from Environmental Services.

Additional components of Regional energy use will be added in future years as more data becomes available. These include:

- Energy inputs by other municipalities to Regional services such as water and wastewater pumping and treatment.
- Energy inputs by Regional suppliers and contractors.
- Energy use for employee business travel on public carriers such as airlines.

Figure 1
Energy Cost Allocation by End Use in 2011

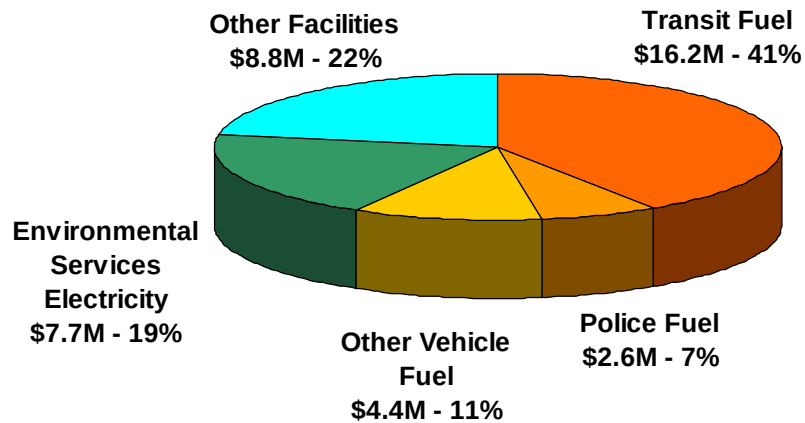
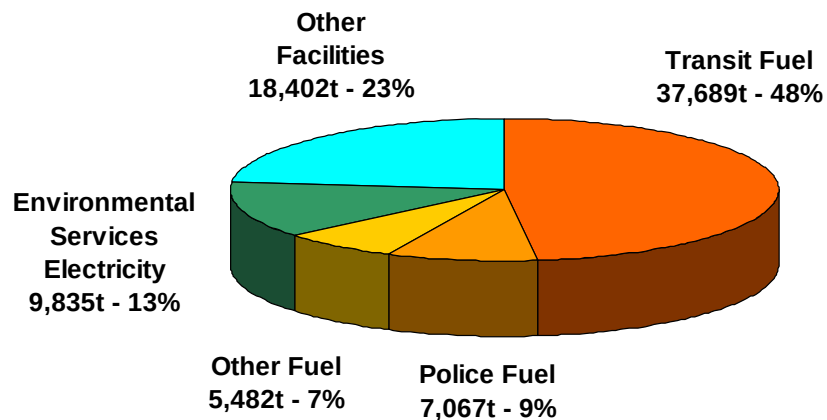


Figure 2
Greenhouse Gas Allocation by End Use in 2011 (tonnes CO₂e)



4. ANALYSIS AND OPTIONS

Per-capita greenhouse gas emissions have declined since 2006

A significant factor driving corporate energy consumption and off-setting efficiency gains is population growth in the Region. Table 1 illustrates that on a per-capita basis, greenhouse gas emissions have dropped by 5%. Per-capita energy costs however have increased by 9% since 2006.

Table 1
Per-Capita Energy and Greenhouse Gas Trends

	2006	2007	2008	2009	2010	2011
Population‡	949,600	982,900	1,012,000	1,032,600	1,062,000	1,085,600
Energy cost	\$31.9M	\$32.4M	\$37.3M	\$32.0M	\$35.8M	\$39.7M
- Per capita	\$33.54	\$32.96	\$36.84	\$31.00	\$33.75	\$36.61
GHGs (tonnes)	71,257	72,882	73,172	73,788	77,360	77,029
- Per capita (kg)	75.0	74.1	72.3	71.5	72.8	71.0

‡ Based on year-end estimates from the Region's Long Range and Strategic Planning Branch, rounded to the nearest 100

GHG emissions for all years have been restated lower by seven to ten per cent compared to last year's Corporate Energy Report to reflect the declining carbon intensity (i.e. less reliance on coal-fired generation) of Ontario's electricity system.

Rising fuel and electricity rates drove most of the energy cost increase in 2011

Table 2 below shows the Region's energy cost trend over the last six years, and the relative impact of consumption and rate changes. Several observations can be derived from the table:

- Total energy costs rose \$3.9 million in 2011 compared to 2010, which was comparable to the prior year's increase.
- Inflationary pressures occurred across most cost drivers. Consumption of electricity, natural gas and water was up 6%, 17% and 9%, respectively. Rates for fuel, electricity and water were all up by at least 10%.
- Electricity consumption was driven primarily by a 36% increase in the Police Department (the new Central Services Building in Aurora) and a 4% increase in the

Environmental Services Department (85% due to new or expanded processes at five facilities).

- Fuel consumption was trending higher in 2011 before the Transit strike that started in late October and continued into 2012.
- Natural gas rates continue a long-term downward trend and are now 36% lower than in 2006.

Table 2
6-Year Energy Cost Trend and Drivers

		2006	2007	2008	2009	2010	2011	2011 Average Rate
Vehicle Fuel	Relative Volume	100	103	106	108	114	109	1.1764 \$/litre
	Relative Rate	100	102	124	94	105	117	
	Volume × Rate	100	105	131	102	120	128	
	Cost	\$18.1M	\$19.0M	\$23.7M	\$18.5M	\$21.8M	\$23.2M	
Electricity	Relative Volume	100	98	100	101	101	107	0.1175 \$/kWh
	Relative Rate	100	98	98	97	102	115	
	Volume × Rate	100	96	97	97	104	123	
	Cost	\$11.5M	\$11.0M	\$11.2M	\$11.2M	\$11.9M	\$14.1M	
Natural Gas	Relative Volume	100	106	104	107	115	134	0.3014 \$/m ³
	Relative Rate	100	96	95	87	69	64	
	Volume × Rate	100	102	99	94	79	86	
	Cost	\$1.8M	\$1.8M	\$1.7M	\$1.7M	\$1.4M	\$1.5M	
Water	Relative Volume	100	110	117	121	116	127	2.6636 \$/m ³
	Relative Rate	100	109	114	125	135	148	
	Volume × Rate	100	120	134	151	157	187	
	Cost	\$0.5M	\$0.6M	\$0.6M	\$0.7M	\$0.7M	\$0.9M	
Total	Cost	\$31.9M	\$32.4M	\$37.3M	\$32.0M	\$35.8M	\$39.7M	

Note: Volumes and rates are indexed relative to 2006 values.

Rising electricity prices can be partially mitigated through supply management initiatives

As indicated in Table 2, electricity represents the second-highest energy cost component for the Region. Supply management initiatives such as utility bill auditing and accelerated adoption of interval meters have yielded significant savings in past years, helping to keep rates relatively flat from 2006 through 2009. However, *Ontario's Long-Term Energy Plan* released in November 2010 predicted electricity rate increases of between 2.7% annually for large industrial accounts to as much as 7.9% annually over the next five years for residential and small business accounts. As a result, additional supply management strategies are being developed by the Property Services Branch.

As reported to Council in November 2009, WattsWorth Analysis Inc. was hired for a three-year term to help the Region further develop its electricity procurement strategy and

assist in balancing risk and cost minimization. WattsWorth is paid a fixed annual fee and does not receive additional benefit from any procurement strategies it recommends.

Initially, 79 mid-sized electricity accounts were moved to the spot market in late 2010. This strategy yielded net savings of \$37,000 in 2011, and is expected to yield increasingly higher savings in coming years.

A comprehensive evaluation of the Ontario electricity market confirmed that the drivers of cost in 2012 will be the regulated and Global Adjustment charges, representing 80% of electricity cost, which cannot be hedged. For this reason, Property Services has chosen to maintain exposure to the ultra-low spot market price for electricity. This has proven to be the least costly choice.

The Property Services Branch will continue to manage electricity cost risk in consultation with WattsWorth Analysis Inc. and the Finance Department. Council will be apprised of any changes in the Region's strategy.

As electricity rates and natural gas rates continue to diverge, fuel switching opportunities become more cost-effective. This is being leveraged at Leslie Street Sewage Pumping Station, where a process upgrade has been extended to include conversion of the facility's electric heating system to natural gas. Another possibility is electricity generation using natural gas engines: at Maple Health Centre, an emergency generator upgrade is being designed for natural gas operation and for participation in the Province's electric demand response program.

Renewable energy is an increasingly important part of the Region's energy supply mix

Renewable energy is an important aspect of the Region's energy supply strategy. Recent and current initiatives include:

- Tendering and renewal of the contract in early 2011 for electricity from low-impact green power generators in Ontario. Participating facilities are the Administrative Centre, the Household Hazardous Waste Depot in East Gwillimbury, the Stouffville Zone 2 Pumping Station, YRT transit shelters and the Police Central Services building in Aurora. The greenhouse gas offset amounts to 600 tonnes per year, equal to taking 120 passenger vehicles off the road.
- Installation of three more solar air heating SolarWalls® at three HYI locations, bringing the total to seven across the Region.
- Installation of a solar water heating system, the second for the Region and its largest, at HYI's Rose Town location.
- Preparation of a design-build Request for Proposal for four large solar photovoltaic roof-top arrays. Despite a new lower Feed-In Tariff proposed in March 2012, the project will still have a simple payback of ten years (due to falling panel prices), which is outstanding for renewable energy projects, and will generate \$540,000 in annual revenue over the 20-year FIT contract.

The success of the Region's LEED® construction standard grows

The list of new Regional facilities being built to Leadership in Energy and Environmental Design (LEED®) standards is increasing. Table 3 shows the 16 projects completed or in progress. One was awarded LEED Silver certification in 2011, bringing the total number of certifications to five. Cost-benefit calculations at the design stage ensure that LEED features have a positive net financial benefit over a reasonable timeframe.

A brochure prepared for school tours by Property Services to describe sustainability features of the York Region Emergency Medical Services Headquarters is included as *Attachment 3*.

Table 3
The Region's LEED® Projects at Year-End 2011

Project	Municipality	Construction Status	LEED Certification Level & Status
Scott Somerville Fire & EMS Station	Vaughan	Completed 2007	LEED Gold in 2007
Macleary Court Community Environmental Centre	Vaughan	Completed 2008	LEED Gold in 2010
Tom Taylor Place ‡	Newmarket	Completed 2009	LEED Gold in 2010
Stouffville Zone 2 Pumping Station ‡	Whitchurch-Stouffville	Completed 2009	LEED Silver in 2011
Leeder Place ‡	East Gwillimbury	Completed 2009	LEED Silver in 2010
York Regional Police Central Services Building	Aurora	Completed 2010	Silver target
York Region Transit Operations and Maintenance Facility	Vaughan	Completed 2010	Silver target
Kingview Addition ‡	King	Completed 2011	Silver target
Bales EMS Operations Centre	East Gwillimbury	Completed 2011	Silver target
Mapleglen Residences ‡	Vaughan	Completed 2011	Silver target
Mackenzie Green (145 Essex Avenue) ‡	Richmond Hill	Construction in progress for 2012 completion	Certified target
Leslie Street Pumping Station ‡	Markham	Detailed design	Certified target
Central Services Centre	Newmarket	Preliminary design	Silver target
Richmond Hill Bus Maintenance Facility	Richmond Hill	Detailed design	Silver target
Forestry Office	Whitchurch-Stouffville	Preliminary design	Silver target
Administration Centre	Newmarket	Policy creation & retrocommissioning in progress	LEED EB Silver target

‡ Indicates facilities not covered by the Region's LEED Silver policy, i.e. Housing York Inc. buildings and process facilities. Any facility less than 500 m² is also excluded. From lowest to highest, the LEED certification levels are Certified, Silver, Gold and Platinum.

Energy efficiency upgrades in existing buildings continue to provide a strong foundation for controlling costs and greenhouse gas emissions

Property Services continued to improve the energy efficiency of existing buildings and operations throughout 2011. Examples included:

- The Administrative Centre ranked in the top 25% of 60 municipal administrative buildings in terms of energy efficiency in the nation-wide Town Hall Challenge.
- Upgrades to boiler, ventilation and automation systems at three York Regional Police District Headquarters at a cost of \$225,000 to save \$20,000 annually for a simple payback of just over 11 years.
- Investigation of solar control window film at two YRP District Headquarters.
- Installation of LED lighting in the clock tower at the Administrative Centre to reduce energy consumption by 80% and to reduce maintenance costs, for a simple payback of 4.5 years. Investigation of LED lighting for other applications at the building, including Council Chambers, the Great Hall and the exterior.
- An upgraded central lighting control panel at the Administrative Centre, to allow tighter after-hours control of lighting and local temporary overrides for cleaning staff and late workers.
- Upgraded ventilation at 50 High Tech with schedule-based variable airflow at a cost of \$103,000 less \$19,000 in incentives to reduce after-hours heating and cooling costs by \$22,000 for a simple payback of 3.8 years.

All energy efficiency upgrades are based upon a strong business case, ensuring payback is less than ten years in aggregate.

Property Services applied to the Ontario Power Authority in early 2012 for an 80 per cent funded “Embedded Energy Manager”. If approved, the position would assist with the planning and delivery of electricity reduction projects until potentially 2014, if interim deliverables are achieved.

LEED® certification at the Administrative Centre will validate and enhance the sustainability of facility operations in existing Regional buildings

In the U.S. in 2011, the square footage of buildings certified under the LEED for Existing Buildings: Operations and Maintenance (EB:O&M) standard surpassed the amount of square footage certified under LEED for New Construction. According to the press release, “The market is becoming increasingly aware of how building owners can get better performance through green operations and maintenance, and tools such as LEED for EB:O&M are essential to cost-effectively driving improvements in our economy and environment. LEED as a rating system is continuing to evolve an ever greater emphasis on performance, not only in energy, but also water, location, indoor environmental quality, and materials.”

Property Services determined previously that the Administrative Centre is favourably positioned for EB:O&M certification within an acceptable timeline and budget. The Branch continues to implement the necessary groundwork at the Administrative Centre to apply for EB:O&M certification, ideally in 2013, with support from key Departments including Supplies and Services and York Regional Police.

Key accomplishments and goals are highlighted in Table 4.

Table 4
Highlights of LEED EB:O&M Certification at the Administrative Centre

Theme	What We Have Accomplished	What We are Working Towards
Sustainable Purchasing	- Over 30% of purchased consumables meet LEED sustainability criteria - Workstation furniture meets low emission and recycled content standards - Most new appliances are EnergyStar® rated	A new Sustainable Products Policy will increase sustainability and track purchases of office supplies, furniture, electronics and appliances, construction materials and light bulbs
Waste Management	- Waste diversion from landfill is at 89% - Less than 3% of old workstation furniture goes to landfill - Batteries and eyeglasses can be recycled in the cafeteria - Fluorescent lamps are recycled to divert hazardous mercury and other materials from landfill	- Even higher waste diversion can be achieved through regular waste audits and employee outreach - Suppliers will be encouraged to take back packaging
Energy Efficiency	- The Administrative Centre is amongst the best 30% of North American office buildings for energy efficiency - Energy retrofits in the past five years have already reduced the building's energy use by over \$200,000 per year - Off-site green energy supplies one-third of the building's electricity	- Building operations, equipment and energy use will be periodically evaluated through energy audits and retrocommissioning to identify energy reduction opportunities - We will empower employees to reduce their energy use through education and feedback
Environmental Quality	- High-quality MERV 13 air filters deliver cleaner air to building occupants - Healthier housekeeping chemicals are being used - Building refrigerants have very low potential for ozone depletion and global warming - Landscapes are maintained without irrigation or pesticides	- A Green Housekeeping Policy will enhance the current green cleaning practices, ensure more healthy cleaning chemicals are used, protect employees with chemical sensitivities, and reduce the environmental impact from cleaning equipment - Building occupant exposure to construction and renovation contaminants will be further reduced
Alternative Transportation	An 18% reduction in single occupant commuting trips has already been achieved through support of carpooling, transit passes and bicycling	Alternative work arrangements and remote networking tools continue to reduce the need for employee travel

The Region is well-positioned for energy conservation planning activities under the *Green Energy Act*

In addition to annual energy reporting, Ontario Regulation 397/11 under the *Green Energy Act* requires public agencies to conduct energy planning activities by July 1, 2014. Specifically, the following must be reported:

- the public agency's goals and objectives for conserving and otherwise reducing energy consumption and managing its demand for energy.
- the public agency's proposed measures under its energy conservation and demand management plan.
- cost and saving estimates for its proposed measures.

While not specifically required by the legislation, Property Services will use the opportunity to explore benchmarking and target-setting with other Departments. Considerations applicable to the exercise include:

- The Sustainability Strategy and Corporate Air Quality Strategy are supportive of setting targets.
- At 59% of total Regional energy cost and 64% of GHG emissions, fleets are an important part of the discussion.
- The other two key theme groups are expected to be buildings (22% of cost) and water and wastewater process (19% of cost).
- The new *ISO 50001 - Energy management systems* standard will be explored as a potentially useful planning framework.
- A major rebuild of the Region's Energy and Environmental Management System (EEMS) software, a key tool for tracking and reporting Regional energy consumption and greenhouse gas emissions, will be completed by Property Services in 2012, with new functionality that will better support the energy planning exercise.
- Multiple reduction scenarios could be developed in cooperation with other Departments, complete with timelines and financial modeling of the cost implications associated with meeting the related targets.

Link to Key Council – approved Plans

From Vision to Results: 2011 to 2015 Strategic Plan

Priority Area – Strengthen Organizational Capacity

Apply continuous improvement activities to core business systems and processes

Energy management is a type of continuous improvement to reduce costs. Key Performance Indicators are being developed as part of the energy and greenhouse gas benchmarking and targeting exercise.

Priority Area – Manage the Region’s Finances Prudently

Use service level and performance metrics to inform policy decisions

Energy and greenhouse gas performance metrics are currently under development.

Draft Regional Official Plan

A number of objectives are addressed, consistent with the policy of Council:

- To demonstrate leadership in energy efficiency and the use of renewable energy systems and alternative energy systems in York Region operations.
- That water and wastewater facilities will be designed and operated to reduce energy use and, where possible, [incorporate] energy recovery.
- To investigate ways to reduce, reuse, recycle, and recover waste in Regional functions and facilities and incorporate reused or recycled material in operations and maintenance.
- To pursue environmentally responsible purchasing practices for Regional operations and services.

Vision 2026

A number of action areas are supported, including the following:

- Using energy more efficiently in operations of the Regional government.
- Providing cost-effective service.
- Encouraging water conservation.
- Investigating and promoting alternative energy sources.
- Living and encouraging the three Rs: reduce, reuse, recycle.

5. FINANCIAL IMPLICATIONS

Savings from energy initiatives continue to accumulate

Cost savings from energy retrofits continue on an upward trend as the benefits accumulate year over year. One-time savings from grants, incentives and energy supply initiatives add significant but highly variable gains. Table 5 below provides a summary for the Energy Program for 2006-2011:

Table 5
Energy Program Summary 2006-2011 (\$Thousands)

Component	2006	2007	2008	2009	2010	2011	Cumulative
Energy Projects							
Cost	\$1,090	\$730	\$228	\$430	\$781	\$862	\$4,122
Savings	-218	-218	-245	-281	-353	-426	-1,740
Grants and Incentives	-70	-592	-61	-185	-13	-281	-1,202
Energy Supply Management							
Green Power	0	0	48	70	82	133	334
Natural Gas Hedging	-47	37	41	56	127	118	332
Bill Management	-103	-102	-971	-667	-92	-330	-2,264
Totals	\$652	-\$145	-\$959	-\$577	\$533	\$77	-\$419

Note: Positive numbers are costs; negative numbers are savings. Includes just direct costs and savings, not indirect items from supporting other initiatives such as LEED buildings or the retrofit program at Housing York Inc.

- The cumulative savings of the Energy Program over the last five years totalled \$419,000 net of costs, which is a noteworthy success since most of the energy retrofits have paybacks longer than six years.
- The Region saved \$833,000 on natural gas net of hedging in 2011 compared to 2006 because of gas rates trending lower. Natural gas hedges through the Association of Municipalities of Ontario have reduced the savings somewhat in five of the past six years as the market price of natural gas continued to trend down; however, the purpose of natural gas hedging is to stabilize costs, not necessarily to save money.
- Bill management yielded significant gains in 2008 and 2009 through the early adoption of interval meters at water and wastewater facilities (but no savings were recorded in 2010 since the electric utility companies would have installed interval meters by that time regardless) and through large billing adjustments from Powerstream.

6. LOCAL MUNICIPAL IMPACT

The Region's energy management activities benefit residents and local municipalities by reducing costs and demands on infrastructure, mitigating environmental impacts, providing an advisory outreach role and promoting sustainable practices.

7. CONCLUSION

In 2011, Regional energy costs totalled \$39.7 million, an 11% increase versus the prior year. This was driven by a 6% increase in electricity consumption due to service expansion (Police and water and wastewater), a 13% increase in electricity rates and an 11% increase in vehicle fuel rates.

Greenhouse gas emissions were flat in 2011 compared to the prior year, at 77,000 tonnes of carbon dioxide equivalent, which is approximately equal to the emissions from 15,400 light passenger vehicles for a year. The York Region Transit strike dampened fuel use and related emissions for the year.

On a per-capita basis, energy cost increased by 8% in 2011 to \$36.60 and greenhouse gas emissions declined by 3% to 70.9 kg.

Energy retrofits led by Property Services have resulted in \$1.7 million in aggregate savings over the last six years. Aggressive pursuit of grants and incentives contributed another \$1.2 million, while judicious application of energy supply management initiatives saved \$1.6 million.

Planning activities currently underway related to energy and conservation reporting under the *Green Energy Act* will help to focus and commit all Regional departments to defining and meeting reduction targets that Council can fully support.

For more information on this report, please contact Barry Crowe, Director, Property Services Branch at Ext. 1684.

The Senior Management Group has reviewed this report.

(The three attachments referred to in this clause were included in the agenda for the June 14, 2012 Committee meeting.)

ATTACHMENT 1

York Region Energy Consumption and GHG Emissions in 2011 (per O.Reg. 397/11 of the Green Energy Act)

Facility Code	Facility Name [& Notes]	Facility Type	Facility Address	Municipality	Department	Hours of Operation	Internal Gross Area (ft²)	2011 Electricity (kWh)	2011 Natural Gas (m³)	Total Energy (ekWh) [1]	Energy Intensity (ekWh/ft²)	GHG Emissions (kg CO2e) [2]	GHG Intensity (kg CO2e/ft²)
N004	York Region Administrative Centre	1 - Administration	17250 Yonge Street	Newmarket	Multi-Dept	5x8	452,302	5,986,024	409,714	10,206,078	22.56	1,672,263	3.70
R022	South Services Centre	1 - Administration	50 High Tech Road	Richmond Hill	Multi-Dept	5x8	110,456	2,838,173	50,637	3,359,734	30.42	521,430	4.72
N044	Gates of York Plaza	1 - Administration	17310 Yonge St.	Newmarket	Multi-Dept	5x8	16,908	291,611	50,792	814,769	48.19	139,739	8.26
G026	Georgina Community Services	1 - Administration	24262 Woodbine Avenue	Georgina	Community and Health Services	5x8	15,951	267,426	35,007	627,998	39.37	106,277	6.66
N003-B1	Newmarket Community Services	1 - Administration	62 Bayview Parkway	Newmarket	Community and Health Services	5x8	20,798	227,600	37,182	610,575	29.36	104,414	5.02
N006	Newmarket EIS, Childcare & Housing Serv	1 - Administration	55 Eagle Street West	Newmarket	Community and Health Services	5x8	10,755	118,266	30,090	428,193	39.81	74,610	6.94
M027	Markham Health Services	1 - Administration	4261 Hwy. #7 East	Markham	Community and Health Services	5x8	13,356	278,586	14,121	424,032	31.75	68,477	5.13
N029	Newmarket Health Services	1 - Administration	22 Prospect Street	Newmarket	Community and Health Services	5x8	10,941	163,452	16,733	335,802	30.69	56,143	5.13
R023	Oak Ridges Early Intervention Services	1 - Administration	13175 Yonge Street	Richmond Hill	Community and Health Services	5x8	16,712	213,267	7,209	287,520	17.20	45,615	2.73
N054	Property Services Office	1 - Administration	130 Mulock Drive	Newmarket	Corporate Services	5x8	11,742	75,263	16,419	244,379	20.81	42,321	3.60
N039	Tannery	1 - Administration	465 Davis Drive	Newmarket	Multi-Dept	5x8	50,549	243,268	0	243,268	4.81	36,490	0.72
M010	Liberty Square Rapid Transit & YRT	1 - Administration	3601 Hwy 7 East	Markham	Transportation and Community Planning	5x8	23,652	229,112	0	229,112	9.69	34,367	1.45
M032	W&WW Operations (Capital)	1 - Administration	8 Laidlaw Blvd, Unit 4	Markham	Environmental Services	7x24	7,652	31,044	15,827	194,062	25.36	34,570	4.52
N049	HYI Head Office	1 - Administration	1091 Gorham St	Newmarket	Community and Health Services	7x24	6,180	102,258	0	102,258	16.55	15,339	2.48
N048	Property Services - Satellite Office	1 - Administration	620 Steven Court	Newmarket	Corporate Services	5x8	4,808	13,263	3,965	54,103	11.25	9,483	1.97
M026	Markham Early Intervention Services	1 - Administration	144 Main Street, Units 10/11/12	Markham	Community and Health Services	5x8	6,061	33,799	0	33,799	5.58	5,070	0.84
D002	Barnwood Square	1 - Administration	1256 Barnwood Square	Durham Region	Environmental Services	5x8	---	1,080	2,676	28,643	n/a	5,220	n/a
n/a	14 Shanklin Way	1 - Administration	14 Shanklin Way	Markham	Community and Health Services	5x8	---	14,220	0	14,220	n/a	2,133	n/a
W012	Forestry Complex	1 - Administration	16389 Highway 48	Whitchurch-Stouffville	Transportation and Community Planning	5x8	892	7,204	0	7,204	8.07	1,081	1.21
n/a	Major Mackenzie & Hill St [3]	1 - Administration	S/E Major Mackenzie & Hill St	Vaughan	Transportation and Community Planning	7x24	---	5,149	0	5,149	n/a	772	n/a
E018	EG Roads / YRP Operations Centre	1 - Administration / 7 - Stora	90 Bales Drive East	East Gwillimbury	Transportation and Community Planning	5x8	124,900	1,277,305	130,576	2,622,238	20.99	438,384	3.51
Total by Facility Type		1 - Administration					904,615	12,417,370	820,948	20,873,134	23.07	3,414,197	3.77
E021	EMS Headquarters [3]	4 - Ambulance Station	80 Bales	East Gwillimbury	Community and Health Services	7x24	74,952	388,210	91,916	1,334,945	17.81	231,953	3.09
N041	EMS Newmarket	4 - Ambulance Station	520 Cane Parkway	Newmarket	Community and Health Services	7x24	21,972	294,876	42,911	736,859	33.54	125,333	5.70
V021	EMS Woodbridge - FH	4 - Ambulance Station	9601 Islington Avenue	Vaughan	Community and Health Services	7x24	12,861	136,045	43,077	579,738	45.08	101,822	7.92
V019	EMS Vaughan-FH	4 - Ambulance Station	111 Racco Parkway	Vaughan	Community and Health Services	7x24	10,112	151,953	37,756	540,840	53.49	94,152	9.31
K021	EMS King City	4 - Ambulance Station	12825 Keele Street	King	Community and Health Services	7x24	3,723	20,261	8,709	109,964	29.53	19,499	5.24
G022	EMS Sutton	4 - Ambulance Station	21001 Dalton Road	Georgina	Community and Health Services	7x24	2,072	19,984	5,992	81,702	39.43	14,322	6.91
E019	EMS Mount Albert	4 - Ambulance Station	22A Princess Street	East Gwillimbury	Community and Health Services	7x24	1,814	22,124	5,398	77,723	42.83	13,521	7.45
Total by Facility Type		4 - Ambulance Station					127,506	1,033,453	235,759	3,461,771	27.15	600,602	4.71

ATTACHMENT 1

York Region Energy Consumption and GHG Emissions in 2011 (per O.Reg. 397/11 of the Green Energy Act)

Facility Code	Facility Name [& Notes]	Facility Type	Facility Address	Municipality	Department	Hours of Operation	Internal Gross Area (ft²)	2011 Electricity (kWh)	2011 Natural Gas (m³)	Total Energy (ekWh) [1]	Energy Intensity (ekWh/ft²)	GHG Emissions (kg CO2e) [2]	GHG Intensity (kg CO2e/ft²)
A005	Police Central Services Building	6 - Police Facility	47 Don Hillock Drive	Aurora	York Regional Police	7x24	244,255	3,354,543	455,880	8,050,107	32.96	1,364,795	5.59
V007	YRP District No. 4	6 - Police Facility	2700 Rutherford Road	Vaughan	York Regional Police	7x24	45,000	891,146	104,979	1,972,430	43.83	332,082	7.38
M002	YRP District No. 5	6 - Police Facility	8700 McCowan Road	Markham	York Regional Police	7x24	40,000	742,503	58,454	1,344,579	33.61	221,854	5.55
N010	YRP District No. 1	6 - Police Facility	240 Prospect Street	Newmarket	York Regional Police	7x24	30,000	588,999	53,701	1,142,119	38.07	189,845	6.33
G018	YRP District No. 3	6 - Police Facility	3527 Baseline Road	Georgina	York Regional Police	7x24	26,500	414,496	57,491	1,006,653	37.99	170,832	6.45
W013	Bruce's Mill Conservation-Safety Village	6 - Police Facility	3291 Stouffville Road	Whitchurch-Stouffville	York Regional Police	5x8	17,533	300,658	0	300,658	17.15	45,099	2.57
R021	Community Resource Centre - Hillcrest Ma	6 - Police Facility	9350 Yonge Street	Richmond Hill	York Regional Police	5x8	8,224	214,538	5,774	274,010	33.32	43,094	5.24
X-A016	YRP Facility #1 [3]	6 - Police Facility			York Regional Police	5x8	15,000	31,987	16,185	198,693	13.25	35,388	2.36
N045	Mulock Centre Police Services	6 - Police Facility	16775 Yonge Street	Newmarket	York Regional Police	7x24	20,319	119,699	0	119,699	5.89	17,955	0.88
K023	YRP Facility CT#4	6 - Police Facility			York Regional Police	7x24	n/a	115,325	0	115,325	n/a	17,299	n/a
n/a	YRP Facility CT#5	6 - Police Facility			York Regional Police	7x24	n/a	51,400	0	51,400	n/a	7,710	n/a
G032	YRP Facility CT#2	6 - Police Facility			York Regional Police	7x24	n/a	42,653	0	42,653	n/a	6,398	n/a
n/a	YRP Facility CT#3	6 - Police Facility			York Regional Police	7x24	n/a	27,662	0	27,662	n/a	4,149	n/a
n/a	YRP Facility CT#6	6 - Police Facility			York Regional Police	7x24	n/a	20,294	0	20,294	n/a	3,044	n/a
n/a	YRP Facility CT#1	6 - Police Facility			York Regional Police	7x24	n/a	17,062	0	17,062	n/a	2,559	n/a
X-A014	YRP Facility #2 [3]	6 - Police Facility			York Regional Police	5x8	12,464	13,841	0	13,841	1.11	2,076	0.17
R001	YRP District No. 2 / EMS Richmond Hill	6 - Police Facility / 4 - Ambu	171 Major Mackenzie Drive West	Richmond Hill	York Regional Police / Community and H	7x24	34,195	713,854	105,996	1,805,613	52.80	307,411	8.99
Total by Facility Type		6 - Police Facility					493,490	7,660,660	858,460	16,502,798	33.44	2,771,588	5.62
W006	Central District Patrol Yard	7 - Storage & Maintenance	16042 Woodbine Avenue	Whitchurch-Stouffville	Transportation and Community Planning	7x24	12,006	218,712	36,846	598,226	49.83	102,446	8.53
G013	North District Patrol Yard	7 - Storage & Maintenance	3525 Baseline Road	Georgina	Transportation and Community Planning	7x24	9,313	176,143	28,597	470,692	50.54	80,470	8.64
V004	Southwest District Patrol Yard (Vaughan)	7 - Storage & Maintenance	2850 Rutherford Road	Vaughan	Transportation and Community Planning	7x24	10,190	243,143	19,707	446,125	43.78	73,718	7.23
R028	Southeast District Patrol Yard (Richmond H	7 - Storage & Maintenance	1700 Major Mackenzie Drive	Richmond Hill	Transportation and Community Planning	7x24	15,448	156,284	24,977	413,547	26.77	70,649	4.57
A022	225 Industrial Parkway South	7 - Storage / Maintenance	225 Industrial Parkway South	Aurora	Multi-Dept	n/a	5,036	0	849	8,745	1.74	1,605	0.32
Total by Facility Type		7 - Storage / Maintenance					51,992	794,282	110,976	1,937,335	37.26	328,887	6.33

ATTACHMENT 1

York Region Energy Consumption and GHG Emissions in 2011 (per O.Reg. 397/11 of the Green Energy Act)

Facility Code	Facility Name [& Notes]	Facility Type	System	Municipality	Department	Hours of Operation	Process Volume (m³) [4]	2011 Electricity (kWh)	2011 Natural Gas (m³)	Total Energy (ekWh) [1]	Energy Intensity (ekWh/ft²)	GHG Emissions (kg CO2e) [2]	GHG Intensity (kg CO2e/ft²)
E014	Holland Landing Pumping Station	8a - Wastewater	Holland Landing	East Gwillimbury	Environmental Services	7x24	433,237	68,518	0	68,518	0.16	10,278	0.02
G016	Keswick Water Pollution Control Plant [3]	8a - Wastewater	Keswick	Georgina	Environmental Services	7x24	3,538,163	4,302,308	4,569	4,349,369	1.45	653,982	0.22
G034	Georgina Sewage Pumping Station No. 4	8a - Wastewater	Keswick	Georgina	Environmental Services	7x24		368,658	0	368,658		55,299	
G017	Keswick Pumping Station	8a - Wastewater	Keswick	Georgina	Environmental Services	7x24		350,234	0	350,234		52,535	
G029	Keswick Morton Avenue Odour Control Facility	8a - Wastewater	Keswick	Georgina	Environmental Services	7x24		55,823	0	55,823		8,373	
V003	Kleinberg Water Pollution Control Plant	8a - Wastewater	Kleinburg	Vaughan	Environmental Services	7x24		1,201,882	0	1,201,882	2.66	180,282	0.40
E011	Mount Albert Sewage Pumping Station	8a - Wastewater	Mount Albert	East Gwillimbury	Environmental Services	7x24	326,961	144,500	0	144,500	3.01	21,675	0.45
E010	Mount Albert Water Pollution Control Plant	8a - Wastewater	Mount Albert	East Gwillimbury	Environmental Services	7x24		840,624	0	840,624		126,094	
K026	Nobleton Water Pollution Control Plant [3]	8a - Wastewater	Nobleton	King	Environmental Services	7x24	41,398	405,229	63,443	1,058,692	26.71	180,692	4.55
K017	Nobleton Pumping Station	8a - Wastewater	Nobleton	King	Environmental Services	7x24		27,493	1,902	47,084		7,719	
K002	Schomberg Water Pollution Control Plant	8a - Wastewater	Schomberg	King	Environmental Services	7x24	301,533	1,087,242	0	1,087,242	3.95	163,086	0.59
K008	Schomberg Dr. Kay Pumping Station	8a - Wastewater	Schomberg	King	Environmental Services	7x24		60,518	0	60,518		9,078	
K025	Schomberg Proctor Road Pumping Station	8a - Wastewater	Schomberg	King	Environmental Services	7x24		42,114	0	42,114		6,317	
G007	Sutton Water Pollution Control Plant	8a - Wastewater	Sutton	Georgina	Environmental Services	7x24	672,676	1,082,719	0	1,082,719	1.86	162,408	0.28
G008	High Street Pumping Station	8a - Wastewater	Sutton	Georgina	Environmental Services	7x24		106,402	0	106,402		15,960	
G025 / G035	South River Road & Sutton Woodriver Bend	8a - Wastewater	Sutton	Georgina	Environmental Services	7x24		61,887	0	61,887		9,283	
M018	Leslie Street Pumping Station	8a - Wastewater	York Durham	Markham	Environmental Services	7x24	116,050,393	8,369,094	0	8,369,094	0.22	1,255,364	0.03
A012	Aurora Pumping Station	8a - Wastewater	York Durham	Aurora	Environmental Services	7x24		8,035,222	0	8,035,222		1,205,283	
V018	Humber Sewage Pumping Station	8a - Wastewater	York Durham	Vaughan	Environmental Services	7x24		3,805,724	0	3,805,724		570,859	
N001	Newmarket Pumping Station, Newmarket East	8a - Wastewater	York Durham	Newmarket	Environmental Services	7x24		1,791,096	34,863	2,150,185		334,555	
V017	Black Creek Pumping Station	8a - Wastewater	York Durham	Vaughan	Environmental Services	7x24		1,710,360	0	1,710,360		256,554	
K024	King City Pumping Station	8a - Wastewater	York Durham	King	Environmental Services	7x24		288,499	0	288,499		43,275	
V034	Vaughan Pine Valley Sewage Pumping Station	8a - Wastewater	York Durham	Vaughan	Environmental Services	7x24		223,737	0	223,737		33,561	
N032	Newmarket Bogart Creek Pumping Station	8a - Wastewater	York Durham	Newmarket	Environmental Services	7x24		222,244	0	222,244		33,337	
M003	Markham Bayview & Steeles Odour Control Plant	8a - Wastewater	York Durham	Markham	Environmental Services	7x24		132,604	0	132,604		19,891	
N003-B2	Newmarket Storage / Lab	8a - Wastewater	York Durham	Newmarket	Environmental Services	5x8		36,713	0	36,713		5,507	
n/a	Aurora Magmeter Chamber	8a - Wastewater	York Durham	Aurora	Environmental Services	7x24		6,400	0	6,400		960	
n/a	Richmond Hill #3 Flume Chamber	8a - Wastewater	York Durham	Richmond Hill	Environmental Services	7x24		3,892	0	3,892		584	
n/a	Flow Control Supply on YDSS, Project #72	8a - Wastewater	York Durham	Markham	Environmental Services	7x24		3,679	0	3,679		552	
n/a	Richmond Hill #2 Flume Chamber	8a - Wastewater	York Durham	Richmond Hill	Environmental Services	7x24		3,301	0	3,301		495	
n/a	Flow Control Supply (YDSS)	8a - Wastewater	York Durham	Markham	Environmental Services	7x24		3,287	0	3,287		493	
n/a	Flow Control Supply (YDSS) 3140 16th Avenue	8a - Wastewater	York Durham	Markham	Environmental Services	7x24		3,191	0	3,191		479	
n/a	Hound Trail Flume Chamber	8a - Wastewater	York Durham	Newmarket	Environmental Services	7x24		3,168	0	3,168		475	
n/a	Vaughan No. 1 Flume Flow Meter	8a - Wastewater	York Durham	Vaughan	Environmental Services	7x24		2,362	0	2,362		354	
n/a	Richmond Hill #2 Flume	8a - Wastewater	York Durham	Vaughan	Environmental Services	7x24		2,190	0	2,190		329	
n/a	Richmond Hill #1 Flume Chamber	8a - Wastewater	York Durham	Richmond Hill	Environmental Services	7x24		1,976	0	1,976		296	
n/a	Richmond Hill #4 Flume Chamber	8a - Wastewater	York Durham	Richmond Hill	Environmental Services	7x24		1,780	0	1,780		267	
M004	Site Office - SE Collector Trunk [3]	8a - Wastewater	York Durham	Markham	Environmental Services	5x8		333	0	333		50	
Total by Facility Type		8a - Wastewater					121,815,579	34,857,003	104,777	35,936,206	0.30	5,426,579	0.04

ATTACHMENT 1

York Region Energy Consumption and GHG Emissions in 2011 (per O.Reg. 397/11 of the Green Energy Act)

Facility Code	Facility Name [& Notes]	Facility Type	System	Municipality	Department	Hours of Operation	Process Volume (m³) [4]	2011 Electricity (kWh)	2011 Natural Gas (m³)	Total Energy (ekWh) [1]	Energy Intensity (ekWh/ft²)	GHG Emissions (kg CO2e) [2]	GHG Intensity (kg CO2e/ft²)
K020	Arnsnoveldt Wells No.1 & 2	8b - Water Supply	Arnsnoveldt	King	Environmental Services	7x24	17,979	32,961	0	32,961	1.83	4,944	0.27
W008	Ballantrae/Musselman's Lake Wells No.1 &	8b - Water Supply	Ballantrae	Whitchurch-Stouffville	Environmental Services	7x24	399,896	248,853	0	248,853	0.80	37,328	0.12
W003	Musselman's Lake Elevated Tank	8b - Water Supply	Ballantrae	Whitchurch-Stouffville	Environmental Services	7x24		70,012	0	70,012		10,502	
G019	Georgina Water Treatment Plant	8b - Water Supply	Georgina	Georgina	Environmental Services	7x24	2,090,909	1,579,080	148,371	3,107,301	1.55	517,283	0.26
G020	Georgina Low Lift Pumping Station	8b - Water Supply	Georgina	Georgina	Environmental Services	7x24		0	10,747	110,694		20,312	
G009	Sutton Elevated Tank	8b - Water Supply	Georgina	Georgina	Environmental Services	7x24		21,147	0	21,147		3,172	
G010	Keswick Water Treatment Plant	8b - Water Supply	Keswick	Georgina	Environmental Services	7x24	1,231,238	877,011	0	877,011	0.77	131,552	0.12
G014	Deer Park Elevated Tank	8b - Water Supply	Keswick	Georgina	Environmental Services	7x24		47,178	0	47,178		7,077	
G015	West Park Heights Reservoir	8b - Water Supply	Keswick	Georgina	Environmental Services	7x24		22,740	0	22,740		3,411	
K003-B2	King City Well No. 4	8b - Water Supply	King	King	Environmental Services	7x24	202,070	209,486	0	209,486	1.54	31,423	0.23
K003-B1	King City Well No. 3	8b - Water Supply	King	King	Environmental Services	7x24		47,560	0	47,560		7,134	
K004	King City North Elevated Tank	8b - Water Supply	King	King	Environmental Services	7x24		32,045	0	32,045		4,807	
K019	King City South Elevated Tank [3]	8b - Water Supply	King	King	Environmental Services	7x24		21,807	0	21,807		3,271	
V002	Kleinburg Wells No. 3 & 4	8b - Water Supply	Kleinburg	Vaughan	Environmental Services	7x24	609,323	327,550	0	327,550	0.69	49,133	0.10
V026	Kleinburg Elevated Tank	8b - Water Supply	Kleinburg	Vaughan	Environmental Services	7x24		59,554	0	59,554		8,933	
V005	Kleinburg Well No. 2	8b - Water Supply	Kleinburg	Vaughan	Environmental Services	7x24		34,115	0	34,115		5,117	
E009	Mount Albert Elevated Tank South and We	8b - Water Supply	Mount Albert	East Gwillimbury	Environmental Services	7x24	350,751	154,419	0	154,419	0.81	23,163	0.12
E026	Mount Albert Well #3	8b - Water Supply	Mount Albert	East Gwillimbury	Environmental Services	7x24		92,888	0	92,888		13,933	
E025	Mount Albert Elevated Tank North	8b - Water Supply	Mount Albert	East Gwillimbury	Environmental Services	7x24		37,429	0	37,429		5,614	
K007	Nobleton Well No. 3	8b - Water Supply	Nobleton	King	Environmental Services	7x24	343,405	156,204	0	156,204	0.92	23,431	0.14
K006	Nobleton Well No. 2	8b - Water Supply	Nobleton	King	Environmental Services	7x24		97,632	0	97,632		14,645	
K013	Nobleton Booster Pumping Station	8b - Water Supply	Nobleton	King	Environmental Services	7x24		38,951	0	38,951		5,843	
K005	Nobleton Elevated Tank	8b - Water Supply	Nobleton	King	Environmental Services	7x24		23,893	0	23,893		3,584	
K010	Schomberg WTP and Well No. 3 [3]	8b - Water Supply	Schomberg	King	Environmental Services	7x24	274,810	359,652	11,260	475,630	1.94	75,229	0.31
K011	Schomberg Elevated Tank	8b - Water Supply	Schomberg	King	Environmental Services	7x24		31,876	0	31,876		4,781	
K009	Schomberg Well No. 2	8b - Water Supply	Schomberg	King	Environmental Services	7x24		25,784	0	25,784		3,868	
W017	Stouffville Zone 2 Pumping Station and Re	8b - Water Supply	Stouffville	Whitchurch-Stouffville	Environmental Services	7x24	2,831,303	828,087	0	828,087	0.65	124,213	0.10
W002	Stouffville Wells No. 5 & 6	8b - Water Supply	Stouffville	Whitchurch-Stouffville	Environmental Services	7x24		386,293	0	386,293		57,944	
W005	Stouffville Wells No. 1 & 2	8b - Water Supply	Stouffville	Whitchurch-Stouffville	Environmental Services	7x24		286,791	0	286,791		43,019	
W001	Stouffville South East Elevated Tank & We	8b - Water Supply	Stouffville	Whitchurch-Stouffville	Environmental Services	7x24		272,697	0	272,697		40,905	
W015	Stouffville Zone 1 Elevated Tank and Boos	8b - Water Supply	Stouffville	Whitchurch-Stouffville	Environmental Services	7x24		80,449	0	80,449		12,067	

ATTACHMENT 1

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Facility Code	Facility Name [& Notes]	Facility Type	System	Municipality	Department	Hours of Operation	Process Volume (m³) [4]	2011 Electricity (kWh)	2011 Natural Gas (m³)	Total Energy (ekWh) [1]	Energy Intensity (ekWh/ft²)	GHG Emissions (kg CO2e) [2]	GHG Intensity (kg CO2e/ft²)
E007	Queensville Well No. 3&4	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		1,789,089	0	1,789,089		268,363	
A004	Aurora Well No. 1-4 Process Building	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		1,068,483	0	1,068,483		160,272	
E008	Queensville Well No. 1&2	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		1,046,548	0	1,046,548		156,982	
N021	Newmarket Well No. 13&16	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		632,806	0	632,806		94,921	
A009	Aurora North Elevated Tank	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		471,400	0	471,400		70,710	
A010	Aurora Well No. 5	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		364,549	0	364,549		54,682	
A006	Aurora Ridge Road Booster Pumping Station	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		314,714	0	314,714		47,207	
A011	Aurora Well No. 6	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		312,256	0	312,256		46,838	
N053	Newmarket Well No. 15	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		311,037	0	311,037		46,656	
N031	Glenway Reservoir and Kirby Crescent Pumping Station	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		307,651	0	307,651		46,148	
A018	Aurora East Booster Pumping Station	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		176,964	0	176,964		26,545	
E002	Holland Landing Well No. 2	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		169,898	0	169,898		25,485	
E013	Holland Landing Well No. 1	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		158,553	0	158,553		23,783	
A019	Aurora South Reservoir	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		128,156	0	128,156		19,223	
E005	Holland Landing Sherwood Forest Pumping Station	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		60,974	0	60,974		9,146	
n/a	Ballymore Water Meter Chamber	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		46,947	0	46,947		7,042	
N018-B2 / N018-B3	Newmarket Wells No. 9 & 14	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		24,951	0	24,951		3,743	
N022	Newmarket Southeast Elevated Tank and Inlet	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24	9,657,975	23,530	0	23,530	0.78	3,530	0.12
N030	Newmarket West Reservoir	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		23,124	0	23,124		3,469	
A007	Aurora Southwest Elevated Tank	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		22,289	0	22,289		3,343	
N013	Newmarket Southeast Elevated Tank	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		18,019	0	18,019		2,703	
N018-B1	Newmarket North East Elevated Tank	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		14,692	0	14,692		2,204	
n/a	Newmarket / Aurora West Meter Chamber	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		12,976	0	12,976		1,946	
N019	Newmarket London Road Elevated Tank	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		12,349	0	12,349		1,852	
n/a	Davis Drive Booster and Valve Chamber	8b - Water Supply	Yonge Street Aquifer	Newmarket	Environmental Services	7x24		11,394	0	11,394		1,709	
n/a	Yonge Street Water Meter Chamber	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		10,393	0	10,393		1,559	
E004	Sharon Elevated Tank	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		10,382	0	10,382		1,557	
n/a	Woodspring Avenue Meter Chamber	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		7,790	0	7,790		1,169	
E012	Holland Landing East Elevated Tank	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		7,232	0	7,232		1,085	
n/a	Yonge St East Meter Chamber	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		6,002	0	6,002		900	
n/a	Allenvale Water Meter Chamber	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		4,932	0	4,932		740	
n/a	Herald Road Water Meter Chamber	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		4,779	0	4,779		717	
n/a	Sharon Meter Chamber # 2	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		2,252	0	2,252		338	
E003	Sharon Meter Chamber	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		1,362	0	1,362		204	
n/a	Bathurst and Wellington Control Valve Chamber	8b - Water Supply	Yonge Street Aquifer	Aurora	Environmental Services	7x24		783	0	783		117	
n/a	Queensville Water Meter Chamber	8b - Water Supply	Yonge Street Aquifer	East Gwillimbury	Environmental Services	7x24		346	0	346		52	

ATTACHMENT 1

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Facility Code	Facility Name [& Notes]	Facility Type	System	Municipality	Department	Hours of Operation	Process Volume (m³) [4]	2011 Electricity (kWh)	2011 Natural Gas (m³)	Total Energy (ekWh) [1]	Energy Intensity (ekWh/ft²)	GHG Emissions (kg CO2e) [2]	GHG Intensity (kg CO2e/ft²)
M006	Bayview Pumping Station	8b - Water Supply	York	Markham	Environmental Services	7x24		5,007,261	0	5,007,261		751,089	
V012	Maple Water Pumping Station	8b - Water Supply	York	Vaughan	Environmental Services	7x24		4,296,115	4,075	4,338,088		652,119	
M008	Markham Pumping Station	8b - Water Supply	York	Markham	Environmental Services	7x24		2,441,037	0	2,441,037		366,156	
R012	Richmond Hill Pumping Station	8b - Water Supply	York	Richmond Hill	Environmental Services	7x24		1,605,104	0	1,605,104		240,766	
R008	Jefferson Pumping Station & Reservoir & V	8b - Water Supply	York	Richmond Hill	Environmental Services	7x24		928,577	0	928,577		139,287	
R032	North Richmond Hill Reservoir and Pumpir	8b - Water Supply	York	Richmond Hill	Environmental Services	7x24		910,471	0	910,471		136,571	
V011	Maple North Reservoir	8b - Water Supply	York	Vaughan	Environmental Services	7x24		127,812	0	127,812		19,172	
A021	Richmond Hill North Elevated Tank	8b - Water Supply	York	Aurora	Environmental Services	7x24		109,189	0	109,189		16,378	
V015	Richmond Hill South Reservoir	8b - Water Supply	York	Vaughan	Environmental Services	7x24		108,125	0	108,125		16,219	
M009	Markham Reservoir - Valve Water Chambe	8b - Water Supply	York	Markham	Environmental Services	7x24		73,337	0	73,337		11,001	
V013	Woodbridge East Booster Pumping Station	8b - Water Supply	York	Vaughan	Environmental Services	7x24		70,758	0	70,758		10,614	
V014	Woodbridge East Elevated Tank	8b - Water Supply	York	Vaughan	Environmental Services	7x24		42,667	0	42,667		6,400	
M007	Markham Milliken Elevated Tank	8b - Water Supply	York	Markham	Environmental Services	7x24		31,561	0	31,561		4,734	
n/a	Langstaff & Essex Water Meter Chamber	8b - Water Supply	York	Markham	Environmental Services	7x24		23,966	0	23,966		3,595	
n/a	Bloomington & Yonge Water Meter Chamb	8b - Water Supply	York	Aurora	Environmental Services	7x24		22,370	0	22,370		3,356	
R009	Oak Ridges Stand Pipe [3]	8b - Water Supply	York	Richmond Hill	Environmental Services	7x24		21,096	0	21,096		3,164	
n/a	Bathurst & Elgin Mills Water Meter	8b - Water Supply	York	Richmond Hill	Environmental Services	7x24		18,778	0	18,778		2,817	
M035	Markham Elevated Tank [3]	8b - Water Supply	York	Markham	Environmental Services	7x24	104,781,884	13,783	0	13,783	0.15	2,067	0.02
n/a	Yonge Street & Highway 407 Water Meter	8b - Water Supply	York	Vaughan	Environmental Services	7x24		11,179	0	11,179		1,677	
V010	Woodbridge West Elevated Tank	8b - Water Supply	York	Vaughan	Environmental Services	7x24		8,527	0	8,527		1,279	
n/a	Bathurst & Major Mack Meter Chamber	8b - Water Supply	York	Vaughan	Environmental Services	7x24		8,034	0	8,034		1,205	
n/a	Bayview Water Meter Chamber	8b - Water Supply	York	Markham	Environmental Services	7x24		7,437	0	7,437		1,116	
n/a	Bathurst & Highway 407 Water Meter	8b - Water Supply	York	Vaughan	Environmental Services	7x24		6,736	0	6,736		1,010	
n/a	16th Avenue & Hwy 404 Valve Chamber	8b - Water Supply	York	Markham	Environmental Services	7x24		6,316	0	6,316		947	
n/a	Allstate Water Meter Chamber	8b - Water Supply	York	Markham	Environmental Services	7x24		6,291	0	6,291		944	
n/a	S/W Major Mackenzie/Markland St	8b - Water Supply	York	Markham	Environmental Services	7x24		3,299	0	3,299		495	
n/a	Times Square Water Meter	8b - Water Supply	York	Markham	Environmental Services	7x24		3,074	0	3,074		461	
n/a	Commerce Valley East Water Meter Cham	8b - Water Supply	York	Markham	Environmental Services	7x24		2,445	0	2,445		367	
n/a	Bathurst St Valve	8b - Water Supply	York	Newmarket	Environmental Services	7x24		2,202	0	2,202		330	
n/a	404 & Elgin Mills Water Meter Chamber	8b - Water Supply	York	Markham	Environmental Services	7x24		1,358	0	1,358		204	
n/a	16th & Cairns Valve Chamber	8b - Water Supply	York	Markham	Environmental Services	7x24		1,099	0	1,099		165	
n/a	McCowan Road & 16th Ave Pressure Relie	8b - Water Supply	York	Markham	Environmental Services	7x24		1,072	0	1,072		161	
n/a	Bathurst and Bloomington Water Meter Ch	8b - Water Supply	York	Aurora	Environmental Services	7x24		704	0	704		106	
n/a	Commerce Valley West Water Meter Char	8b - Water Supply	York	Markham	Environmental Services	7x24		544	0	544		82	
n/a	Sussex & Langstaff Water Meter	8b - Water Supply	York	Markham	Environmental Services	7x24		301	0	301		45	
Total by Facility Type		8b - Water Supply					122,791,543	30,006,371	174,453	31,803,237	0.26	4,830,672	0.04
Overall York Region Totals [5]								86,769,139	2,305,373	110,514,481		17,372,526	

- Notes
1. Total energy in ekWh = electricity consumption in kWh + (natural gas consumption in m³ x 10.3)
 2. GHG emissions in kg CO2e = (electricity consumption in kWh x 0.15 kg/kWh) + (natural gas consumption in m³ x 1.89 kg/m³)
 3. Energy consumption recorded for just part of the year, usually a new facility starting up, or an old facility being decommissioned.
 4. Process volumes for water and wastewater facilities are only meaningful when grouped by system.
 5. Not all Regional operations are included within the scope of the Green Energy Act reporting, e.g. Housing York Inc., street and traffic lights, transit, long-term care, solid waste, gross leased and 3rd-party operated, vehicle fleets.

Summary Data Table for 2011 York Region Corporate Energy Report (eDocs #4113690)

Component	Cost						Energy Consumption								Greenhouse Gas Emissions							
	2006	2007	2008	2009	2010	2011	Volume Measure	2006	2007	2008	2009	2010	2011	Emission Factor (kg per unit volume)	2006	2007	2008	2009	2010	2011		
Electricity – Environmental Services	\$6,527,129	\$6,185,325	\$6,458,104	\$6,104,629	\$6,319,691	\$7,708,231	kWh	64,324,920	62,397,367	64,944,414	64,284,299	63,228,248	65,567,648	0.15	9,649	9,360	9,742	9,643	9,484	9,835		
Electricity – All other owned & net leased	\$4,340,939	\$4,191,524	\$4,072,358	\$4,416,004	\$4,885,247	\$5,566,710	kWh	41,091,265	40,711,021	40,067,824	42,049,239	43,822,921	47,732,579	0.15	6,164	6,107	6,010	6,307	6,573	7,160		
Electricity – Gross leased & 3rd-party operated	\$618,600	\$603,800	\$601,700	\$593,600	\$628,000	\$703,000	kWh	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000	0.15	900	900	900	900	900	900		
Electricity – EEMS adjustments	\$0	\$0	\$0	\$0	\$0	\$0	kWh	695,747	680,515	693,081	701,801	706,538	781,772	0.15	104	102	104	105	106	117		
Electricity – microFIT	\$0	\$0	\$0	\$0	\$0	-\$7,187	kWh	0	0	0	0	0	0	0.15	0	0	0	0	0	0		
Electricity – Green power	\$0	\$0	\$48,356	\$69,984	\$82,248	\$132,995	kWh	0	0	0	0	0	0	0.15	0	0	-255	-368	-433	-723		
Natural Gas – All owned & net leased	\$1,480,166	\$1,529,335	\$1,472,394	\$1,408,031	\$1,205,459	\$1,334,555	cu.m.	3,142,165	3,364,423	3,305,982	3,417,738	3,696,437	4,427,597	1.89	5,939	6,359	6,248	6,460	6,986	8,368		
Natural gas – Gross leased & 3rd-party operated	\$282,600	\$272,700	\$267,200	\$247,200	\$195,700	\$180,900	cu.m.	600,000	600,000	600,000	600,000	600,000	600,000	1.89	1,134	1,134	1,134	1,134	1,134	1,134		
Water – All owned & net leased	\$476,636	\$570,491	\$638,541	\$720,438	\$747,992	\$891,388	---	---	---	---	---	---	---	---	---	---	---	---	---	---		
Vehicle Fuel – Transit diesel fleet	\$12,706,560	\$13,191,408	\$17,082,352	\$12,771,970	\$15,429,646	\$16,200,824	litres	13,446,095	13,769,737	14,188,000	14,629,978	15,569,774	14,441,552	2.71	36,439	37,316	38,449	39,647	42,194	39,137		
Vehicle Fuel – Transit biodiesel	\$0	\$0	\$3,150	\$5,844	\$6,272	\$5,412	litres	0	0	0	0	0	0	2.68	0	0	-843	-1,563	-1,678	-1,448		
Vehicle Fuel – Police gasoline fleet	\$2,711,544	\$2,868,356	\$3,269,916	\$2,642,988	\$2,862,191	\$2,629,300	litres	3,123,899	3,123,899	3,123,899	3,158,982	3,136,588	3,072,600	2.30	7,185	7,185	7,185	7,266	7,214	7,067		
Vehicle Fuel – EMS heavy-duty diesel	\$357,757	\$412,098	\$516,169	\$387,833	\$454,887	\$492,278	litres	375,828	427,505	427,861	435,381	469,515	396,878	2.71	1,018	1,159	1,160	1,180	1,272	1,076		
Vehicle Fuel – EMS heavy-duty gasoline	\$39,508	\$43,679	\$47,625	\$19,405	\$92,386	\$315,928	litres	41,145	44,757	40,327	20,979	87,157	254,296	2.35	97	105	95	49	205	598		
Vehicle Fuel – EMS light-duty gasoline	\$106,213	\$133,326	\$112,239	\$84,411	\$140,010	\$224,249	litres	114,788	137,687	99,109	94,161	138,969	185,454	2.30	264	317	228	217	320	427		
Vehicle Fuel – Other heavy-duty diesel	\$164,108	\$227,110	\$313,139	\$217,468	\$236,083	\$293,054	litres	194,365	274,745	311,906	270,928	264,528	277,536	2.71	527	745	845	734	717	752		
Vehicle Fuel – Other light-duty diesel	\$2,740	\$2,435	\$4,234	\$1,694	\$5,789	\$3,547	litres	3,071	2,617	3,541	2,100	5,962	2,960	2.73	8	7	10	6	16	8		
Vehicle Fuel – Other heavy-duty gasoline	\$36,353	\$61,905	\$81,095	\$71,512	\$54,215	\$59,047	litres	41,726	73,151	79,041	92,158	60,816	55,601	2.35	98	172	186	217	143	131		
Vehicle Fuel – Other light-duty gasoline	\$268,475	\$334,978	\$377,721	\$325,585	\$440,381	\$562,252	litres	304,020	369,345	372,386	392,221	474,499	496,582	2.30	699	849	856	902	1,091	1,142		
Vehicle Fuel – ENV emergency generators	\$45,478	\$90,558	\$97,172	\$41,649	\$63,269	\$104,179	litres	100,083	113,197	121,465	51,097	92,580	122,816	2.71	271	307	329	138	251	333		
Vehicle Fuel – Employee mileage (gasoline)	\$1,687,769	\$1,682,240	\$1,817,227	\$1,880,878	\$1,995,010	\$2,341,646	litres	330,800	329,700	342,500	354,500	376,000	441,300	2.30	761	758	788	815	865	1,015		
Totals	\$31,852,575	\$32,401,267	\$37,280,693	\$32,011,124	\$35,844,477	\$39,742,307									71,257	72,882	73,172	73,788	77,360	77,029		

- Notes**
- Electricity, natural gas and water use is tracked via in-house Energy and Environmental Management System (EEMS) software based on actual utility bills. The exception is gross leased and 3rd-party operated facilities, where the Region does not receive utility bills, and are instead estimated based on typical per-square-foot consumption figures for each facility type. Electricity volumes include the loss factor, ranging from 3 to 6% depending on location and year.
 - Dollar amounts include the full value of any taxes appearing on the invoices.
 - Fleet vehicle fuel is tracked by the Region's contractors for Transit fleet, by York Region Police for the Police fleet, by the EMS department for the EMS fleet and by Transportation Services for all other fleet vehicles. A new integrated fleet maintenance application is being implemented for all fleets in 2011, that will include detailed fuel tracking. Fuel costs do not include the impact of fuel hedging activities by the Finance Department.
 - Diesel fuel for Environmental Services emergency generators is tracked by the Finance Department and does not include a year-end adjustment for fuel remaining in storage.

- Use of employee vehicles for business purposes is based on mileage claims and an estimated typical passenger vehicle efficiency of 9.8 litres per 100 km.
- Electricity emission factor is from the National Inventory Report 1990-2010: Greenhouse Gas Sources and Sinks in Canada (2012), Table A13-7 for Ontario in 2010. Natural gas emission factor is from the same report, Table A8-1. Vehicle emission factors are from the same report, Table A8-11.
- Biodiesel emission credit is an average of 6 biodiesel types specified in*GHGenius* Version 3.12b, NRCan, 2008. Assumes tailpipe emissions only, and no input emissions.

WELCOME TO THE YORK REGION EMERGENCY MEDICAL SERVICES HEADQUARTERS **A LEED® Candidate**



DID YOU KNOW?

In Canada, buildings are responsible for:

- 25 per cent of landfill waste generated
- 33 per cent of all energy used
- 50 per cent of natural resources consumed

Certification systems like Leadership in Energy and Environmental Design (LEED®) and Ontario EcoSchools provide a way to evaluate and improve the environmental performance of buildings.

For more information, email energy@york.ca



Think about how you use energy, water, materials and waste at home.



Energy Conservation

The EMS Headquarters is expected to use half as much energy as a typical building:

- Better windows and more wall insulation reduce heat loss in winter and heat gain in summer
- Room temperature is computer controlled
- Big fans are used in the wellness centre and ambulance garage to keep people comfortable with less energy
- Heat is recovered from exhaust air in winter to warm up incoming fresh air

More ways to save energy:

www.enbridgegas.com/homes/manage-energy/

- Ceiling or other fans can be used to make you feel cool without turning on air conditioning
- Turn off electronics when they're not being used



Construction Materials and Waste

During construction, large recycling bins were used to separate wood, metal, drywall and concrete ensuring proper recycling of materials.

Many of the materials used in the building contain recycled content to reduce the need to take from nature.

Check out the EcoSchools Waste Minimization Guide

Find someone to reuse the stuff you don't want anymore at www.freecycle.org

- Use reusable grocery bags instead of disposable plastic bags
- When getting rid of things that can still be used, give it away instead of throwing it out
- Make your own compost for your garden
- Use low-odour & latex paints



Photos courtesy of Enermodal Engineering

Energy Efficient Lighting

We save energy by using computer controlled lighting which automatically turns off lights when people leave a room or when there is enough sunlight in the room.

Learn ways to save electricity: www.saveonenergy.ca

- Turn off lights when you leave a room
- Replace inefficient incandescent light bulbs with curly compact fluorescents or the newer LED light bulbs



Renewable Energy

We installed solar photovoltaic (PV) panels to transform the sun's energy into electricity. Our 10-kilowatt system produces enough electricity in a year to run one average, inefficient home or three efficient homes.

 *Natural Resources Canada:
www.nrcan.gc.ca/energy/renewable/1580*

- At home, the sun's energy can be used to generate electricity with a solar PV panel or it can be used to heat water or air
- You can open your curtains and blinds during the day in winter to let the sun warm the inside of your house.



Indoor Water Conservation

We save water by having low flow showers and faucets, and low flush toilets and urinals.

Water used for ambulance washing is recycled and used to wash the next ambulance.

 *Learn about water saving tips and programs at: www.waterfortomorrow.ca*

- Replace older shower heads with more efficient ones that use no more than 5.7 litres of water per minute
- Replace older or leaking toilets with dual flush or high efficiency toilets that use 4.8 litres per flush or less



Outdoor Water Conservation

We save water outside by planting mostly native and adaptive plants and trees that don't need to be watered.

Rainwater is collected from the roof and used to water the green roof (the plants are called sedums) when it's really dry.

 *Check out the EcoSchools Ground Greening Guide*

- Plant native or adaptive plants at home to increase the health of the natural environment
- Don't overwater your lawn. Plant grass types that don't need much water such as fescue
- Use a rain barrel to collect rainwater for watering your garden



Alternative Transportation

The best parking spots are reserved for people who carpool together instead of each driving their own car. We also make it easy for people to bike to work by providing bicycle racks and showers.

 *Parents can find people to carpool with: www.SmartCommute.ca*

- Try riding your bicycle or walk to school instead of driving – it's good exercise and better for the environment
- For longer distances, why not try public transit?

