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### CORPORATE ENERGY REPORT 2008

**The Finance and Administration Committee recommends the adoption of the recommendation contained in the following report dated May 26, 2009, from the Commissioner of Corporate Services.**

#### 1. RECOMMENDATION

It is recommended that:

1. This report be received for information by Committee and Council as an example of the municipal energy reporting requirements anticipated under the Green Energy Act.

#### 2. EXECUTIVE SUMMARY

Energy consumption in York Region's corporate operations has a substantial impact, costing \$37 million in 2008 and generating nearly 80,000 tonnes of greenhouse gases.

On a per capita basis, cost has been increasing by 5% annually (over the last three years) to \$36.88 due to more expensive vehicle fuel, but greenhouse gases have been decreasing by 2% annually to 78.6 kg per person due to internal efficiencies and offsets.

Key energy management developments and initiatives by the Property Services Branch under the Sustainability Strategy umbrella are described herein. These include energy efficiency retrofits, energy procurement, green energy and LEED® construction of new buildings.

Aggregate savings of nearly \$2.5 million were achieved during the 3-year period from 2006 through 2008. The program moved into a net positive position (by \$575,000) for the year 2008. Rising utility rates and new projects will act to increase the amount further.

#### 3. PURPOSE

This annual report describes the progress and outlook of energy management and sustainability activities by the Corporate Energy Services section within the Property Services Branch (PSB). The content of previous reports has been expanded to include all sources of energy use by the Region, including fuels for fleets, and greenhouse gas (i.e. carbon footprint) calculations, with three-year trending. Costs for, and savings from PSB energy management activities are provided, and ongoing/upcoming initiatives are described. The intention is to satisfy public agency reporting requirements expected under the Green Energy Act.

The discussions herein reference the Corporation only, not the larger community.

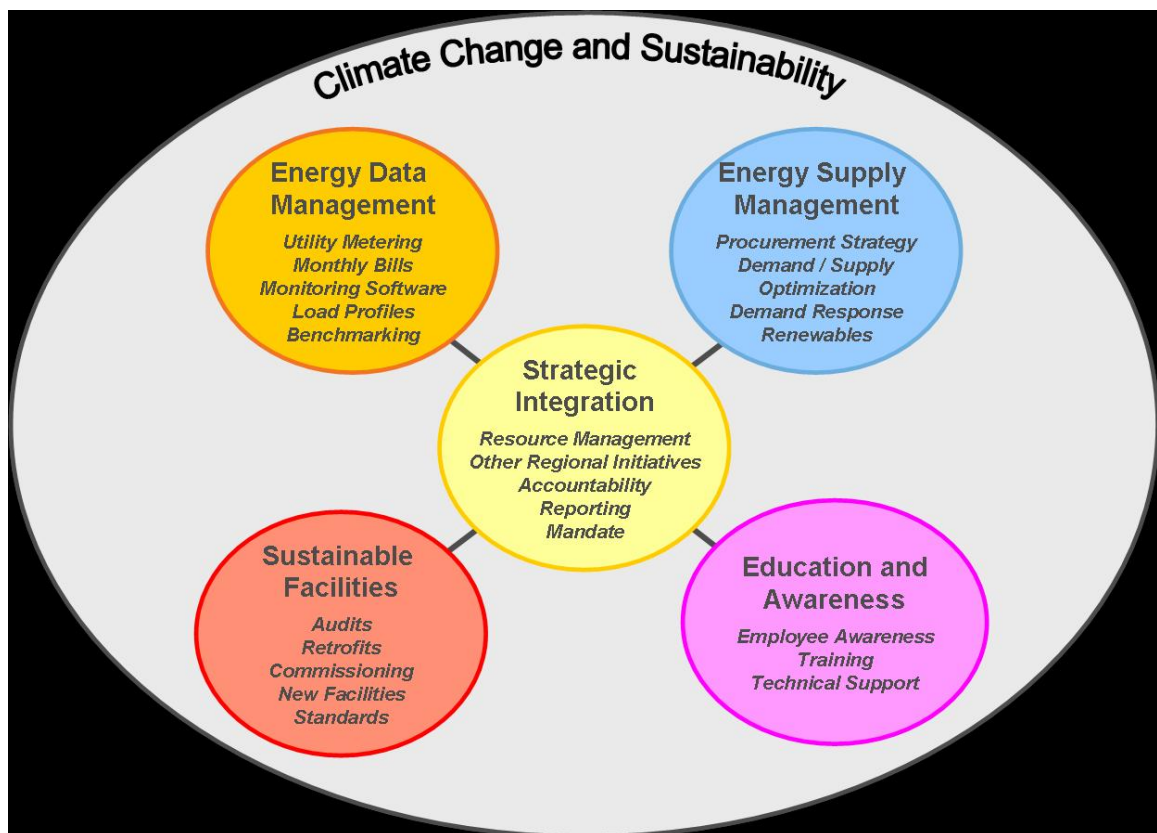
#### 4. BACKGROUND

This section outlines the Property Services Branch energy management mandate and strategic approach as well as highlighting new legislation and broader market trends.

##### **The Property Services energy mandate is multi-faceted**

The Corporate Energy Services (CES) section was formed in early 2003 within the Property Services Branch (PSB). Its primary focus is to implement energy cost reduction initiatives across Regional buildings and operations. Increasingly, the broader concerns of sustainability and climate change have become important secondary drivers. The various activities are depicted in Figure 1.

**Figure 1**  
Property Services Energy Management Themes and Activities



## Property Services energy management activities address key action items in the Sustainability Strategy

A Strategic Energy Plan (SEP) was created in early 2008 with input from other Regional departments to identify key energy management goals and actions by 2010, 2015 and 2026, respectively. The SEP dovetails with energy-related aspects of other sustainability initiatives within the Region such as the Sustainability Strategy and the Corporate Air Quality Strategy. PSB is supporting the office of the CAO in its efforts to develop a framework for coordinating the various initiatives.

**Table 1**  
Key Short-Term Action Items in Strategic Energy Plan

Theme	Action Item	Sustainability Strategy Principles Supported <sup>1</sup>
Strategic Integration	All departments to set targets, develop Action Plans, and consider sustainability / life-cycle costs when making business decisions.	1, 2
Strategic Integration	Establish funding mechanism for energy / sustainability projects.	3
Energy Data Management	Upgrade tracking and reporting tools for energy and greenhouse gases. Develop benchmarks.	5
Energy Supply Management	Develop strategies for procuring traditional energy supply, green energy and demand response.	4
Sustainable Facilities	Develop and implement energy efficiency standards and best practices for all new and existing Regional facilities.	3,4
Sustainable Facilities	Create a green procurement policy for goods and services.	4

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<b>Theme</b>	<b>Action Item</b>	<b>Sustainability Strategy Principles Supported <sup>1</sup></b>
Education and Awareness	Develop employee efficiency / sustainability training.	8

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<sup>1</sup>Referenced Principles from Sustainability Strategy are as follows: 1) Provide a long-term perspective on sustainability. 2) Evaluate using the triple bottom-line elements of environment, economy and community. 3) Create a culture of continuous improvement, minimizing impact, maximizing innovation and increasing resiliency. 4) Identify specific short-term achievable actions that contribute towards a sustainability legacy. 5) Set targets, monitor and report progress. 8) Raise the level of sustainability awareness through education, dialogue and reassessment.

### **The first Departmental Energy Plan was drafted in 2008**

Further to the first action item above, PSB and the former Water and Wastewater Branch drafted a departmental Energy Management Plan in 2008. It is being revisited subsequent to the integration of the Water and Wastewater and Solid Waste Management Branches into the Environmental Services Department.

### **The Region designates a Municipal Energy Conservation Officer**

In April 2009, Council appointed Michael Lithgow, Manager of Corporate Energy Services as the Municipal Energy Conservation Officer (MECO) for York Region. This was in response to a recommendation from Ontario's Chief Energy Conservation Officer at the Ontario Power Authority (OPA) that municipalities voluntarily appoint MECOs to champion conservation within municipal structures and beyond to the broader community.

The MECO will work co-operatively with the OPA and with other MECOs and with relevant associations across the province to create a network of local energy conservation problem solvers who can provide mutual support that enhances their impact in their own environs. MECOs would promote participation in programs offered by the OPA and from other provincial/federal sources, so that their benefits accrue fully to their municipalities, local businesses, and residents. In essence, MECOs would help create the "culture of conservation" that Ontario hopes to achieve.

## **Ontario passed the Green Energy Act**

In May 2009, the Province passed Bill 150, the Green Energy Act, 2009 (GEA). The GEA is intended to attract new investment in renewable energy, create green economy jobs, better protect the environment and foster a culture of conservation. Key features of this legislation are:

- The Energy Conservation Leadership Act is repealed, but most of its provisions are re-enacted in the Green Energy Act, including the requirement for public agencies to establish energy conservation plans.
- The Renewable Energy Standard Offer Program (RESOP) that provided preferential pricing for some renewable energy projects will be replaced by a more standardized and inclusive feed-in tariff (FIT) program. The FIT for small solar electric, in particular, could be up to 80 ¢/kWh, which is double the RESOP amount and over ten times the market rate for electricity. Paybacks of ten years may now be possible for solar electric projects. A 4.8-kW installation at Stouffville Zone 2 Reservoir and Pumping Station may be the first Regional project to qualify, generating approximately \$6,700 annually.
- Various potential barriers to renewable energy projects are addressed, such as improving access to transmission and distribution systems, and simplifying environmental approvals and municipal permitting.
- Municipalities will no longer have to form a separate business corporation to generate green electricity.
- The OPA's Conservation Bureau is dissolved and Ontario's Environmental Commissioner takes over most of its duties.
- Energy labelling may be required for any building offered for sale or lease, with an initial focus on single family homes.
- Energy conservation will become a more central theme in the Ontario Building Code, with energy reviews every 5 years.
- The government's backgrounder suggests that LEED® Silver would be the standard for new public sector buildings. This is already Regional policy, having been approved by Council in 2006.

## **The Province plans to require annual energy reporting**

Regulations concerning annual public agency energy reporting are expected soon under the new provincial Green Energy Act. It is anticipated that reports will have to include the following information:

- An itemized description of the public agency's significant energy-consuming technologies and operations.
- A summary of annual energy usage for each of these technologies and operations.

- A description of current and proposed activities and measures to conserve and energy the energy used by the public agency.
- A summary of the progress and achievements in energy conservation and other reductions since the previous plan.

The content of this report is expected to satisfy the pending provincial reporting requirements.

### **Energy prices have moderated in the first quarter of 2009**

The economic slowdown in 2008 disrupted inflationary pressure on energy prices. Water is the only utility not experiencing recent declines, as municipalities continue to implement a cost recovery mandate. See Table 2.

**Table 2**  
Energy Price Trends

<b>Component<sup>1</sup></b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009Q1</b>
Electricity, ¢/kWh	4.64	4.78	4.88	4.30
Natural Gas, ¢/m <sup>3</sup>	29.1	27.1	32.9	22.0
Vehicle Fuel, ¢/L	94.5	95.8	120.4	85.1
Water, \$/m <sup>3</sup>	1.80	1.96	2.06	2.14

<sup>1</sup>Electricity price is the simple average Hourly Ontario Energy Price and does not include regulated charges such as distribution. Natural gas is the average monthly price at Alberta's AECO "C" hub plus transportation (estimated) to Ontario. Vehicle fuel is based on the average diesel price in Southern Ontario from Ontario's Ministry of Energy and Infrastructure. Water is an average of water plus sewer rates for the Region's local municipalities.

Recent price declines cannot be expected to persist for long however. Even before the economy recovers, pressures are building due to costs related to infrastructure replacement and expansion (electricity), taxation (HST), resource depletion (natural gas and other fossil fuels) and environmental mitigation (GHGs).

### **The Region will benefit from a new electricity rate structure this fall**

Effective November 2009, municipalities will begin paying for electricity on a time-of-use basis for most facilities. (This deadline has already been delayed several times due to infrastructure constraints.) It mirrors the smart meter initiative for residences, where power used during the daylight hours on weekdays is more expensive. We anticipate that

the Region will be a net beneficiary, because its extensive 24-hour operations will benefit from less expensive overnight and weekend rates. As noted in Section 6, we have already realized substantial savings by proactively installing interval meters on a number of larger accounts to take advantage of time-of-use rates.

Multi-unit residential buildings, on the other hand, including social housing and long-term care facilities, will continue to receive favourable treatment under the existing Regulated Price Plan after November 2009.

## 5. ANALYSIS AND OPTIONS

The following sections describe the Region's energy profile and current energy management and sustainability initiatives.

### 5.1 Energy costs the Region \$37 million annually

**Table 3**  
Regional Energy Costs (2006-2008, \$Millions)

<b>Component</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>% of Total</b>	<b>Annual Change</b>
Electricity	11.2	10.9	11.1	30%	0%
Natural gas	1.9	2.1	1.9	5%	0%
Vehicle fuel	18.2	19.1	23.7	64%	+14%
Municipal water	0.5	0.6	0.6	2%	+10%
<b>Totals</b>	<b>31.8</b>	<b>32.7</b>	<b>37.3</b>	100%	+8%
Per capita <sup>1</sup> (\$)	<b>33.45</b>	<b>33.26</b>	<b>36.88</b>		+5%

<sup>1</sup>Based on year-end population figures of 950,700 in 2006, 983,100 in 2007 and 1,011,400 in 2008.

Key observations from Table 3:

- The highest energy cost components are Transit fleet fuel (\$17.1M in 2008 for YRT & Viva), electricity use by Environmental Services (\$6.5M, primarily for water and wastewater pumping), and Police fleet fuel (\$3.3M). These three components together account for 72% of energy costs.
- Vehicle fuel experienced the highest rate of increase during the three-year period.
- Electricity, natural gas and water use is tracked accurately via the in-house Energy and Environmental Management System (EEMS) software. Fleet fuels

appear to have a lower degree of accuracy / repeatability due to less reliable contract operator reporting (in the case of transit) or the difficulty of tracking diverse fuel purchase sources (all non-transit fleets).

- The Corporate Air Quality Strategy reported a total energy cost of \$18.7M for 2004, or \$13.1M less than the table above shows for 2006. This is primarily due to the addition of Viva in late 2005 (added \$10.3M).

## 5.2 Regional operations emit nearly 80 kilotonnes of greenhouse gases annually

**Table 4**  
Regional Carbon Footprint (2006-2008, tonnes CO<sub>2</sub> equivalent)

Component	2006	2007	2008	% of Total	Change % / yr
Electricity	22,109	22,089	22,052	27.8%	-0.1%
Natural gas	7,741	9,005	7,991	10.1%	1.6%
Vehicle Fuel	47,785	49,186	49,408	62.2%	1.7%
Totals	77,634	80,279	79,451	100.0%	1.2%
Per capita (kg)	81.7	81.7	78.6		-1.9%

Key observations from Table 4:

- Emissions have been expressed in terms of CO<sub>2</sub>e, which stands for carbon dioxide equivalent. Greenhouse gases (GHGs) all have different global warming potentials (GWPs); in order to express their impacts as a single pollutant, their GWPs were normalized according to the GWP of CO<sub>2</sub>, summed, and written as CO<sub>2</sub>e.
- Similarly to the energy costs in Table 2, the highest GHG components are Transit fleet fuel (38,165 tonnes in 2008), electricity use by Environmental Services (13,639 tonnes), and Police fleet fuel (7,810 tonnes). These three components together account for 76% of GHG emissions.
- The Corporate Air Quality Strategy reported 55,274 tonnes of greenhouse gases for 2004, or nearly 20,000 tonnes less than the table above shows for 2006. This is primarily due to the addition of Viva in late 2005 (added 19,818 tonnes).
- The emission factor for electricity is greatly influenced by the generation supply mix in the area where the facility is located. Generally, a common factor is applied for all of Ontario, but it is relatively low due to significant low-emission generation sources, especially nuclear and hydroelectric. Jurisdictions with predominantly coal-fired generation, for instance, have electricity emission factors that are up to five times higher than Ontario's. The electricity emission

factor can also vary from year to year, further complicating the GHG reporting. A common factor for all three years was used in the table above for the sake of simplified reporting.

- More work is needed to track GHG emissions from employee air travel, from refrigerant leakage and from degradation of organic material in wastewater processes and disposal of corporate and community solid waste.
- There is some discretion, however, in defining corporate boundaries for GHG reporting. Most methodologies consider employee commuting (i.e. travel between home and the workplace), energy use in leased facilities and emissions from waste disposal as optional reporting items. The Partners for Climate Protection also doesn't include transit under the corporate inventory (goes to community inventory instead), nor does it consider refrigerant leakage. The ISO 14064 Standard regards business travel in non-corporate vehicles as an optional reporting item.

### **5.3 Benchmarking is critical to understanding and reducing energy use**

Benchmarking is the process of comparing facilities and operations to each other and to industry best practices. In many cases, industry best practices have not been established yet but several local initiatives in which York Region is involved are encouraging, including:

- the Municipal Energy Performance Benchmarking Project by the Association of Municipalities of Ontario;
- the greenhouse gas inventory initiative by the Water and Wastewater Expert Panel of the Ontario Municipal Benchmarking Initiative; and
- the Greening Canada's Administration Buildings project by the Canadian Green Building Council.

Ongoing internal efforts seek to establish Key Performance Indicators for energy (eKPIs) for various Regional operations such as buildings, water and wastewater operations and fleet.

Identification of suitable eKPIs and subsequent energy management target setting require extensive collaboration with senior management and individual departments, especially the biggest energy users, namely Transit, Environmental Services, and Police.

Energy volume is used above as the basis for comparison, but cost of energy or volume of greenhouse gases could be used as an alternate or complementary measure. Further discussion is likely to yield additional or more appropriate eKPIs, and may identify the need for more accurate or higher-resolution (i.e. facility- or equipment-level) data.

#### **5.4 The EEMS tool continues to evolve**

The internally developed Energy and Environmental Management System (EEMS) is a critical tool for tracking and reporting on the more than 1200 utility bills received every month by the Region. Automating the process was a singular accomplishment, resulting in savings from reduced processing time and from identifying billing errors.

Departmental representatives are trained on a periodic basis so that they can generate reports for the department as needed.

The Region makes the tool available to other municipalities on a cost recovery basis. Current licence-holders are the Region of Waterloo, Town of Markham, Halton Region, Town of Oakville and Norfolk County.

#### **5.5 LEED® construction of new buildings is proving worthwhile**

In 2006, Council approved a minimum sustainable design and construction standard for most new Regional buildings of LEED Silver. The benefits of LEED construction include:

- energy and water savings
- other reduced impacts on the environment such as fewer greenhouse gases, less use of non-renewable virgin materials, more suitable landscaping and facilitation of alternative transportation
- a more comfortable and healthful building, which should lead to happier and more productive employees
- demonstrated environmental leadership and fulfillment of key goals in various Regional policies including Vision 2026, the Sustainability Strategy, the Corporate Air Quality Strategy and the Strategic Energy Plan

**Table 5**  
List of the Region's LEED® Projects

<b>Project</b>	<b>Construction Status</b>	<b>LEED Certification Level and Status</b>
Vaughan Fire / EMS Station #7-9	Occupied	LEED Gold awarded
Tom Taylor Place	Occupied	LEED Silver target
Stouffville Zone 2 Pumping Station	Completion 2009Q2	LEED Certified target
Vaughan Community Environmental Centre	Completion 2009Q2	LEED Silver target
Police Investigative / Support Services	Start Build 2009Q2	LEED Silver target
Bus Maintenance Facility	Start Build 2009Q2	LEED Silver target
Central Services Centre	Conceptual Design	LEED Silver target

The average incremental cost for the first five LEED projects is approximately 4.2% (\$5.0 million on project costs of \$106 million). For a typical project, about one-third is for soft costs such as consulting and registration fees, the rest is for capital upgrades that arguably should be done anyway on the basis of favourable life-cycle costing.

We have found that the discipline of the LEED process acts to reduce “slippage” back to conventional, easier methods during the hectic time- and budget-constrained construction process.

The LEED policy is producing the desired impacts, at about the expected cost.

## **5.6 Building retrofits offer further savings**

Energy audits and retrofits are continuing across the portfolio. With the completion of the third phase of the Building Energy Feasibility Studies (BEFS III) in early 2008, all 61 of the Region's larger buildings have been audited, and will be re-audited on a 5-year cycle.

In order to address the numerous smaller Regional buildings where a standalone audit is not justified, the Property Services Branch piloted a novel approach by combining Building Condition Assessments (which address physical and structural aspects of building condition) with BEFS. An added benefit of this approach is that efficiency aspects are more likely to be considered during the normal capital planning process.

Energy retrofits totalling \$2.2M are underway in 2009 in six water and wastewater facilities, ten HYI buildings, two long-term care facilities, a Police District headquarters, and four other assorted buildings. Savings are projected to be \$244,000 annually.

PSB is in the early stages of pursuing the new LEED® for Existing Buildings certification for the Administrative Centre. This will help to validate and formalize many of the more sustainable operational procedures and policies already practiced by Property Services Branch and others.

### **5.7 Gas and electricity supply management yields savings and price stability**

The Region continues to participate in the gas hedging program run by the Association of Municipalities of Ontario. The program is achieving its goal of reduced price volatility, and achieving modest savings in most years.

Further to Council direction, PSB is working towards implementing an electricity fixed-price contract strategy in 2009.

Significant electricity savings have already been achieved by installing interval meters on selected large accounts, as noted in Section 6.

### **5.8 Green energy plays an increasingly important role for the Region**

Electricity from renewable sources totalling \$73,000 annually (2.5 MWh) is being purchased via Bullfrog Power for two facilities, the Administrative Centre (partial) and the Household Hazardous Waste depot in East Gwillimbury. A third facility, the new Stouffville Pumping Station, is proposed to be added as part of its LEED® certification. The Pumping Station also incorporates 4.8 kW of on-site solar power.

In late 2008, a feasibility study for a wind turbine at the Sutton Water Pollution Control Plant was concluded. This involved wind resource mapping, wind measurements for a year, environmental assessment, public consultation and a cost-benefit analysis for three sizes of turbine. Unfortunately, the wind resource proved insufficient, and the net present value of the project was negative in all but the most optimistic scenarios. In January 2009, Council decided not to proceed further with the project. We are continuing to monitor turbine technology and pricing, and electricity market pricing.

The use of emergency generators for temporary demand response (to relieve electrical grid loading) received a boost in January with a decision from Ontario's Ministry of the Environment that clarified air emission requirements. The potential revenue from upgrading emergency generators across the Region is substantial, from \$60,000 to \$125,000 per MW per year. We are working with various departments to initiate pilot projects. The generator at the Aurora Sewage Pumping Station could be available for demand response in 2009.

Fifty kilowatts of demand response capacity continues to be available at the Administrative Centre (AC), by way of shutdown of non-essential equipment (mostly lighting), generating good awareness and a small amount of revenue for the Region. PSB

has a project to increase the available demand response capability at the AC, and to possibly expand the program to other facilities, such as the Central Service Centre.

### **5.9 Education and awareness is key to achieving long-term corporate change**

Although the results of education and awareness are harder to measure than for an energy retrofit in an existing building, or compared to energy modeling on a new building, some studies have shown that education and awareness activities can yield much larger savings over the long term. PSB is beginning to address this potential in the following ways:

- quarterly newsletters distributed via York Beat
- departmental EEMS training
- support for environmental activities including Earth Hour, Earth Week and Energy Conservation Week
- creation of display banners *Sustainability in Your Workspace! Sustainability in your Workplace!*
- lunch-and-learn style ecoTalks
- preliminary discussions with key departments about efficiency / sustainability training needs

### **5.10 Property Services Branch is pleased to acknowledge and assist other sustainability initiatives**

We are pleased to support a number of sustainability projects initiated by other departments, including the following:

- The CAO's office is developing a coordinating framework for the diverse sustainability initiatives in the Region's various departments. This will assist with sharing technical expertise, establishing best practices and avoiding redundant efforts.
- Water and wastewater facilities are exempt from the Region's LEED® Silver policy for new construction, but the new Stouffville Zone 2 Reservoir and Pumping Station is on track for certification in 2009. The building (not including process) produces net zero GHGs since electricity requirements are supplied by two sun-tracking solar electric panels and green electricity purchases. Construction waste diversion is expected to exceed 90%, and the facility is being used as a springboard for expanding green cleaning practices across the Environmental Services department.
- Similarly, Housing York Inc. is exempt from the LEED® Silver policy, but Tom Taylor Place in Newmarket is expected to achieve certification in 2009. The energy model predicts 58% lower energy use than a conventional building.
- The Planning Department is updating the Regional Official Plan to promote sustainability principles such as compact and transit-oriented new communities, alternative and renewable energy systems including district energy facilities, and

LEED® standards for new buildings. In particular, the Plan proposes that new communities be supported by Community Energy Plans, and be constructed to optimize solar energy opportunities.

- Environmental Services is now including energy conservation aspects in its award-winning public outreach activities, including the Water for Tomorrow program.
- The Community and Health Services Department delivers 20/20 The Way to Clean Air initiative, working with schools, workplaces and community groups to increase awareness of the link between energy use, air quality and greenhouse gas emissions.
- The York Regional Forest achieved Forest Stewardship Council (FSC) certification status in 2000, the first public forest in Canada to do so. This certification is checked annually by FSC and international observers, and brings recognition to the York Regional Forest as a leader in site restoration and forest management. Wood from Regional forests could eventually help new Regional buildings achieve LEED® credits for sustainably harvested, local content.
- The Viva bus fleet used a 5% biodiesel blend in winter, and 20% in summer, to achieve an 836-tonne greenhouse gas credit in 2008, as noted in Section 5.2.

### **5.11 Relationship to Vision 2026**

The energy management activities of the Property Services Branch support an Enhanced Environment under Goal 2 in Vision 2026 and specifically addresses the following:

- Anticipating and responding to climate change;
- Using energy and water more efficiently in operations of the Regional government; and
- Investigating and promoting alternative energy sources.

### **5.12 Energy management activities are accelerating in 2009 and 2010**

As noted in previous sections, key areas of opportunity are being pursued in the near term, including:

- energy retrofits in Regional facilities valued at \$2.2M and yielding a further \$224,000 in annual savings
- exploring sustainable funding options
- LEED® design and construction of new facilities
- LEED® certification of an existing building, the Administrative Centre
- electricity, natural gas and green energy supply management
- development of departmental Strategic Energy Plans
- development of departmental energy KPIs
- incorporation of sustainable considerations in day-to-day operations and decision-making

- supporting other energy management and sustainability efforts at the Region, local municipalities and the community

## 6. FINANCIAL IMPLICATIONS

Cost savings from the activities of Corporate Energy Services over the three-year period 2006 to 2008 totalled nearly \$2.5 million. Program costs during the same period including capital expenditures and salaries less grants and incentives totalled nearly \$3 million. See Table 6 and Table 7 below. Because much of the savings repeats annually, building upon itself year over year, the program moved into a net positive result in 2008 (\$575,000) and should continue to do so in the future.

**Table 6**  
Annual Savings & Revenue (2006-2008)

<b>Component</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Natural Gas Procurement <sup>1</sup>	\$81,700	\$2,800	(\$19,700)
Electricity Interval Meters		\$177,000	\$473,700
Utility Bill Verification <sup>2</sup>	\$83,000		\$539,000
EEMS Licences	\$20,000	\$8,000	\$28,000
Admin Centre Retrofits <sup>3</sup>	\$218,000	\$218,000	\$218,000
11-Site Lighting Retrofits			\$27,000
HYI Retrofits <sup>1</sup>	\$7,600	\$47,300	\$122,100
Blue Willow Efficient Design <sup>3,4</sup>	\$35,400	\$35,400	\$35,400
Bales Drive Efficient Design <sup>3,4</sup>	\$25,000	\$25,000	\$25,000
Vaughan Fire/EMS LEED Design <sup>3,4</sup>		\$12,600	\$12,600
Tom Taylor LEED Design <sup>4,5</sup>			\$14,900
<b>Totals</b>	<b>\$470,700</b>	<b>\$526,100</b>	<b>\$1,476,000</b>

<sup>1</sup>The gas program through AMO produced savings in 2006, was neutral in 2007 and cost extra in 2008. Savings can't be expected every year, but should add up in the Region's favour over longer periods in addition to reducing volatility. The numbers shown include periodic refund cheques.

<sup>2</sup>Savings achieved in collaboration with Finance and Transportation and Works. The bulk of the 2008 amount is a retroactive credit from Powerstream for flat-

rate-billed intersections that were converted to LED signal lights. Does not include savings from reduced number of cheques being processed due to bill consolidation.

<sup>3</sup>Savings recur every year following implementation. Assumes utility rates remain constant from the time of implementation (a conservative approach).

<sup>4</sup>Based on energy models generated during design process for these new buildings.

<sup>5</sup>Part-year savings. Full year is projected to be \$44,800.

**Table 7**  
Annual Program Costs and Incentives (2006-2008)

<b>Component</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Staffing	\$421,200	\$531,000	\$503,400
Capital Expenditures <sup>1</sup>	\$992,400	\$301,700	\$179,900
HYI Capital Expenditures <sup>1</sup>		\$366,100	\$317,900
Grants & Incentives <sup>2</sup>	(\$70,100)	(456,300)	(\$100,100)
<b>Net Cost</b>	<b>\$1,343,500</b>	<b>\$742,500</b>	<b>\$901,100</b>

<sup>1</sup>Does not include (incremental) costs for efficient / LEED construction of new buildings. Most LEED costs are difficult to separate out from overall construction cost; usually about 4% for a typical new building, see Section 5.4.

<sup>2</sup>Based on the date that funds were actually received.

## **7. 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.

## **8. CONCLUSION**

### **The Energy Management Program is paying off for the Region**

Significant progress has been made in developing and implementing efficiency and sustainability initiatives in new and existing Regional facilities. EEMS continues to be a

valuable tool for the Region and other municipalities for tracking and reporting on energy use and greenhouse gas emissions. Opportunities for intelligent management of energy supply are being explored. Efforts to support other departments and strategic plans have been increasingly emphasized.

Property Services Branch achieved aggregate savings of nearly \$2.5 million during the 3-year period from 2006 through 2008. The program moved into a net positive position (by \$575,000) for the year 2008. Rising utility rates and new projects will act to increase the amount further.

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.