



Corporate Report

NO: R240

COUNCIL DATE: November 20, 2006

REGULAR COUNCIL

TO: Mayor & Council DATE: November 14, 2006
FROM: General Manager, Planning and Development FILE: 5280-11
SUBJECT: City Initiatives for Energy Planning

RECOMMENDATION

The Planning and Development Department recommends that Council:

1. Receive this report as information;
2. Endorse the City of Surrey's participation in the Community Action on Energy Efficiency ("CAEE") program, as described in Appendices I and II, to promote the objectives of the Province's Energy Efficiency in Buildings Strategy; and
3. Authorize the City Clerk to forward a copy of this report and related resolution to the Ministry of Energy Mines and Petroleum Resources.

INTENT

The purpose of this report is to:

1. Summarize the City's current energy policies;
2. Provide an overview of current energy efficiency initiatives in the City; and
3. Seek Council's endorsement of two projects under the CAEE program that support the Province's objectives to improve energy efficiency in buildings.

BACKGROUND

The Official Community Plan contains an extensive range of policies promoting energy efficiency and the use of alternative energy. A summary of these policies is included as Appendix III of this report.

The increasing amount of energy consumed by buildings, particularly from non-renewable sources, and the environmental impacts of some energy sources, notably fossil fuels, has increased awareness of the importance of improving energy efficiency and promoting lower impact energy sources.

The City is a Power Smart partner with BC Hydro and has engaged a consultant to develop energy saving measures, has implemented a wide variety of energy efficiency measures in existing corporate facilities and has completed pilot projects applying leading energy technologies. These projects include, among many others, the application of Leadership in Energy and Environmental Design (LEED) guidelines in the Semiahmoo Library/RCMP building and the use of geothermal energy in the South Surrey Recreation Centre. These initiatives have already achieved annual Greenhouse Gas (GHG) reductions of 838 tons of CO₂ and energy savings of 3,085,352 kWh from lower gas and electricity consumption. The City's proposed future program includes additional measures to achieve total reductions of 3,308 tons of CO₂ and 12,375,156 kWh in energy. As a result of these efforts, the City was a contender for the 2006 Energy Aware Award, an award presented annually by the Community Energy Association.

While the City has taken a leadership role in promoting energy efficiency in corporate facilities and a number of private sector projects constructed in Surrey have been constructed to the LEED standards, there are still considerable opportunities for the promotion of energy efficiency practices in the community. Many of these initiatives have modest initial costs and short payback periods. Increasing energy prices are reducing these payback periods, which are now as short as three to five years, depending on the technologies applied. With a population of over 400,000 and the highest growth rate for new building construction in the region, the City is in a position to promote significant reductions in energy consumption and GHGs in the GVRD.

DISCUSSION

As a result of the identification of potential energy savings within the City, staff prepared several proposals for community energy projects which could have significant potential for positive impacts in terms of absolute energy savings. These projects also have potential for increasing awareness of energy issues in the development community and for providing easily accessible technical information to the public.

After a review of these proposals by Provincial staff, Surrey was selected to participate in the Ministry of Energy, Mines, and Petroleum Resources (MEMPR) expanded CAEE program and the Ministry of Environment's integrated energy, air quality and greenhouse management planning initiative. Approximately \$45,000 in grants has been made available to the City for two projects:

- **Surrey Energy Efficiency Workshop:** This workshop is intended to increase awareness among developers and City staff, regarding best practices in energy efficiency and the benefits of improving the energy efficiency of buildings. In conjunction with the workshop, technical information materials will be made available to Surrey residents and the development community.

- **Surrey City Centre Community Energy Planning:** This parallel study will complement background research being undertaken for the City Centre Plan Update process and build upon a 1996 study that identified significant cost savings that could be achieved in the City Centre by the application of best practices in building. It will also form part of the Sustainability Charter work that is in progress.

A copy of the proposals for each of these projects is included as Appendices I and II.

It is expected that a third energy related project proposal, a feasibility study of the potential of using geothermal energy in new development in the Grandview Heights Neighbourhood Concept Plan area, may be funded at a later date. Geothermal energy is an exciting technology which extracts energy from the earth for space heating in the winter and can return energy to the earth for cooling in the summer that reduces the use of electrical or fossil fuel sources to a small fraction of the total energy required for heating and cooling.

Participation in the CAEE program provides additional benefits to the City. In particular, owners of existing residential properties in Surrey are now eligible to apply for the Energy Savings Plan (ESP), a limited time program offering up to \$2,100 in government grants and utility rebates for reducing household energy costs, along with the expertise and assistance needed to get the required upgrades done to their homes. Other ESP programs also apply to some multi-family buildings (up to \$23,000 in grants) in the City and some Institutional, Commercial and Industrial buildings (up to \$8,000 in grants). The City will be promoting these programs through links on the City's web site, informational brochures and media releases in support of these grants being made available to Surrey residents and businesses.

Requirement for Council Resolution

A requirement of participation in the CAEE program is a Council resolution indicating that the City is supportive of working towards the objectives of the province's Energy Efficiency in Buildings Strategy and endorses participation in the program. This does not obligate the City to meet any specific energy targets. It is anticipated that the City's approach to promoting energy efficiency will be through:

- Demonstrating ongoing community leadership;
- Increasing awareness of the benefits of energy efficiency and alternative energy sources among residents, businesses and the development community;
- Providing access to information; and
- Encouraging energy efficiency initiatives.

CONCLUSION

The City has shown leadership with a large number of energy efficiency initiatives and a number of private sector projects have also implemented systems that provide for improved energy efficiency. With a large population and rapid growth, Surrey has the potential to make a significant contribution to reducing greenhouse gases and energy consumption through promoting energy efficiency and alternative energy sources. By participating in the CAEE program, the City will access funding for community energy

planning, energy awareness and education programs and grants to homeowners and building owners for reducing their energy consumption.

It is therefore recommended that Council pass a resolution endorsing the City's participation in the CAEE program to promote the objectives of the Province's Energy Efficiency in Buildings Strategy.

How Yin Leung
Acting General Manager
Planning and Development

MA/kms/saw

Attachments:

- Appendix I Surrey Energy Efficiency Workshop Proposal
- Appendix II City Centre Community Energy Plan Proposal (without attachments)
- Appendix III Summary of City OCP Energy Policies

September 29, 2006

File: CAEE Application

Andrew Pape Salmon, P. Eng., MRM
Manager, Energy Efficiency and Community Energy Solutions
Ministry of Energy Mines and Petroleum Resources
PO Box 9314, Stn Prov Govt,
Victoria, BC
V8W 9N1

Dear Mr. Pape Salmon,

Re: Community Action on Energy Efficiency Surrey Energy Workshop Proposal

I am writing in response to the proposal call for the Community Action on Energy Efficiency Pilot Program (CAEE). The CAEE Application Form is attached.

This proposal letter includes the following:

1. Proposal Description – including background, scope and deliverables.
2. Work Plan and Budget - outlining the steps and budget related to the development of design guidelines and energy performance guidelines for new and renovated buildings.

The following sections provide a detailed description of these proposal elements.

Note that the energy efficiency potential for existing buildings/major renovations remains to be determined because the percentage of the building stock that may be impacted by this measure cannot be determined at this time. The potential impact could be estimated as part of the case studies of selected projects.

1. Proposal Description

The objective of the CAEE pilot project proposal is to conduct a workshop with staff, developers, builders, consultants, with government and energy utility representatives as resources. The purpose of the workshop is to develop energy performance guidelines and an accessible set of resources to assist in meeting those targets.

The development of guidelines is proposed under the Leadership and Voluntary Measures categories of the proposal call. It is anticipated that the guidelines would be developed initially as voluntary measures and, subject to evaluation and acceptance by the development community, could be incorporated into design guidelines at some point in the future.

Background

The City of Surrey has a population of approximately 411,700 and is the fastest growing municipality in BC. The estimated population increase between July 2005 and June 2006 was 11,700 residents. Surrey's population represents approximately 19% of the total population of the GVRD. Development activity in Surrey continues to be strong in all sectors. There were

4,058 new residential units constructed in 2005, and commercial and industrial construction increased from \$140 million to \$209 million. Overall, total construction value increased from \$1.026 billion in 2004 to \$1.087 billion in 2005 (5.9%).

Based on the current development activity, the promotion of energy performance guidelines for new and renovation projects has the potential to significantly reduce energy consumption and greenhouse gas production in the region. The development of energy performance guidelines also has the potential to promote energy efficiency beyond the Surrey area, given that many developers and their consultants work throughout the region and the province.

In 1995 BC Hydro sponsored a study of the potential for application of Community Energy Principles (CEP) to development in Surrey. The Community Energy Principles used for the energy savings estimates in the study were mainly planning based measures (e.g., efficient land use and transportation systems) with some building design features (e.g., solar space and water heating, ground source heating, district heating). The study estimated that using these principles, Surrey residents, businesses and government agencies could save \$26 million annually in energy costs, reduce per capita air emissions by 10-15% and accommodate 13,000 more residents than the "base case" (land use policy defined by the OCP of the time). The study did not list building specific energy performance guidelines in the CEP scope.

Part of the background study for this proposal would be to re-evaluate the potential energy savings and other benefits resulting from adoption of energy efficiency guidelines. It is expected that promoting the use of energy performance guidelines for the City would have economic and environmental benefits that would likely exceed previous estimates. It is also expected that promoting the goals of MEMPR's Energy Efficiency Plan for BC would benefit not just the City of Surrey but also the region and the province.

Scope

The proposal is to conduct a workshop for representatives of the development industry, to develop energy performance guidelines, and provide tools to promote their implementation. The workshop would be similar to one conducted by the City of Kelowna in 2005. The City would invite representatives from government, energy utilities, local developers, builders, building design professionals, and City planning and development staff. The agenda would include:

1. Background – rationale for energy performance including federal and provincial context, and benefits to the municipality, developers, consumers, and public (e.g., estimated energy savings and GHG reduction); summary of current City of Surrey energy performance and sustainable development policy; an introduction to energy performance guidelines; an outline of the provincial Energy Efficiency Plan (e.g., EnerGuide 80 for Part 9 buildings and MNECB - 25% for part 3 buildings); and a strategy for promotion of improved energy performance for discussion.
2. Incentive Programs - overview of government and energy utility incentives and resources provided by representatives from government, energy utilities, e.g., MEMPR, NRCan (CBIP, R-2000, and EnerGuide agents), Green Buildings BC, BC Hydro, Terasen.
3. Energy Performance Agencies – presentations by industry agencies that provide resources or guidelines for energy performance, e.g., Canadian Green Building Council BC (provincial LEED agents), Built Green (local EnerGuide agent), Canadian Home Builders Association BC / CHBA-BC (local R-2000 agents).

4. Engineering and Design Consultants – presentation of software and energy modelling as a design tool, e.g., CBIP, EnerGuide, and R-2000 program modelling software.
5. Developer Panel Discussion – present brief case studies of local developer initiatives and the business case for energy performance. Follow with discussion on how to effectively promote energy performance measures, including the benefits, challenges and resources required.

Some possible projects include:

- Industrial – retail distribution centre
- Multi-family residential – high rise mixed use residential in City Centre
- Single family residential – townhouse Built Green project in South Surrey
- Commercial office – government office commercial in City Centre
- Institutional – health authority and non-profit housing

Note that there are developers in each of the sectors noted above that have already initiated or completed projects in Surrey with energy performance features. Some of these developers have also indicated interest in participating in a workshop or other initiatives to promote the higher energy efficiency in the design, approval and construction process. Their projects may also be appropriate for the case studies to be included as deliverables.

Deliverables

- Summary of workshop proceedings including proposed guidelines, resources, and recommendations for implementation.
- Energy Performance Guidelines to be implemented on a voluntary basis. A Consultant will prepare case study reports for selected projects to document results, including a description of energy efficiency measures, estimate of annual energy savings, GHG reduction, incremental cost, simple payback, and return on investment. Estimated annual energy savings of city-wide implementation to be reviewed, based on Building Permit and Development Permit applications.
- Information materials and "how-to" kit. This reference information will be in formats suitable for both major developers constructing multi-family or commercial buildings and smaller developers working on ground-oriented housing projects.

Schedule

It is anticipated that the workshop and summary could be carried out by March 31, 2007. A draft of the developer information package would be available at that time and the package would be finalized for widespread distribution by September 2007.

The case study reports would be prepared when the DP process is completed for the pilot development projects. It is expected that the case studies would be completed toward the end of 2007, subject to the approval process. A potential case study project for each of the building types listed in workshop agenda item 5 above has been identified.

A brief analysis of each of the projects would be prepared, with the intent of developing a database and annual report for assessing the effectiveness of the program. The intent is to encourage all developers who express interest in developing energy efficient buildings to participate in the Surrey CAEE Pilot Program.

2. Work Plan and Budget

	Description	Hours	Rate	Cost
1.	Background Review	40	100	4000
	Previous CAEE Pilot Projects (E.G., Kelowna)			
	Energy Performance Guidelines In Other Jurisdictions			
	Existing Energy Performance Policy - City Of Surrey			
	Incentive Programs			
	Consultant Resources			
	Federal Programs			
	Provincial Programs			
	Utilities			
2.	Workshop Preparation	50	100	5000
	Presenters			
	Staff			
	Facilitator			
	Utilities			
	Developers			
	Consultant			
	Government			
	Other Agencies			
	Presentation Materials			
3.	Workshop Delivery	50	100	5000
	Facilitator			
	Design Consultants- 2			
	Staff - 8			
	Utilities			
	Developers			
	Consultant			
	Government			
	Other Agencies			
	Venue - Est. 100 Attendees			3000
4.	Workshop Summary & Recommendations	20	100	2000
	Staff			
	Facilitator			
5.	Information Materials			
	Design			3500
	Printing			1500
	SUBTOTAL			24000
	CONTINGENCY			1000
	TOTAL			\$25,000

Thank you for the opportunity to submit a proposal to this program.

Yours sincerely,

Tom Ainscough, MAIBC
Senior Planner, Urban Design

Community Action on Energy Efficiency
Project Proposal – Surrey City Centre Community Energy Planning

29 September 2006

The City of Surrey is pleased to make this proposal submission under the "Energy, Greenhouse Gas and/or Air Quality Planning" funding stream of the Community Action on Energy Efficiency (CAEE) Program.

Background

Surrey is conducting a major update of the plan for the City Centre (See Attachment 1), which is being seen as the Lower Mainland's second major downtown and the major urban centre for the Fraser Valley. As part of this planning process, a major focus will be on promoting sustainability concepts, including environmental quality, improved energy efficiency, the use of alternative energy sources and community design that reduces energy consumption through creating compact, complete neighbourhoods that focus on walking, cycling and transit as transportation choices.

Project Scope

This project will build upon an earlier, high-level energy planning exercise (See Attachment 2) to create a Community Energy Plan for the City Centre area that will:

- Update the baseline of current energy consumption;
- Project energy consumption for study area build-out using current trends in building practices, infrastructure and transportation modal splits;
- Identify best practices in community design, infrastructure, building standards and transportation system for reducing energy demand and promoting low-impact energy sources;
- Project energy consumption for study area build-out using recommended best practices in building, infrastructure and transportation modal splits;
- Prepare a clear business case for the use of residents, developers, businesses and the City that quantifies the costs and benefits of applying best energy practices, including initial capital costs, operating costs and estimates of payback periods, where applicable; and
- Make available a practical information summary for developers, staff, external agencies and other stakeholders with an interest in City Centre development.

This result of the process is intended to be an integrated Community Energy Plan for the City Centre, with the following components:

Community Energy Planning and Implementation Activities

The study will identify best practices in energy and practical opportunities in rapidly developing urban centres and recommend approaches for applying these practices in both public and private sector infrastructure and buildings. The business case deliverable will go beyond principles to demonstrate how principles can be applied in practice with modest initial capital investments and reasonable payback periods.

Greenhouse Gas Action Planning and Implementation Activities

The City Centre Community Energy Plan will build on the success of the Surrey Central Transit Village planning process, a joint project of Transport Canada, TransLink and the City.¹ This process has the objective of reducing Greenhouse Gas emissions through the creation of a complete, compact, Transit Oriented Development at Surrey Central SkyTrain rapid transit station. It is intended that the entire City Centre study area will be designed to be transit-oriented and thereby reduce the need for the private automobile.

Air Quality Management

The project will look at measures to reducing the impacts of energy consumption from buildings, transportation and infrastructure. In conjunction with the City Centre Plan update, measures will be identified for making the study area more attractive for office uses in this transit-oriented area order to attract more of these jobs from lower density, automobile dependent business parks.

Products

While addressing the identified scope of the project, the selected consultant will deliver the following products:

1. Energy consumption methodology and estimates. This will be a computational tool for determining, in approximate terms, the amount of energy currently being consumed per capita and the amount that would be consumed under alternative development scenarios, including "business as usual," improved practices and best practices.
2. Best Practices summary. This component will summarize the best practices being applied to buildings, infrastructure and community design that contribute to reduced energy and resource consumption in a rapidly growing urban centre.
3. Business Case template. Based on a package of recommended measures, this tool will provide an analysis of the capital costs, maintenance costs and potential operating and energy savings that would be realized by residents, businesses and the City in order to provide support for a recommended Community Energy Plan coordinated with the land use plan.

Evaluation Criteria

Demonstrating the established or emerging importance of energy, air quality and/or greenhouse gas emissions within higher-level community planning and longer term commitments.

The City of Surrey has a strong set of policies in place to reduce energy demand, support energy efficiency and promote the use of alternative energy sources (see Attachment 3). These policies are supported by a set of design guidelines and implementation strategies.

The City's 2006 application to the BC Energy Aware Awards (See Attachment 4) describes the wide range of activities the City is currently engaged in to reduce energy consumption, including

¹ See http://www.translink.bc.ca/Plans_Projects/Urban_Showcase/Transit_Villages/surrey_central.asp

widespread retrofits of existing municipal buildings, applying geo-exchange in a new recreation centre and applying LEED guidelines in new municipal buildings.

Applicability of work to other municipalities

Surrey is a member of FCM's Partners for Climate Protection and will be working with the Community Energy Association on the "Toward Energy Sustainability of Community Infrastructure" project, which seeks to share information on energy issues.

The products of the project described in this application will include a best practices review, a model community energy plan and a business case for implementation in the context of a major regional town centre. These products will be made available to other municipalities with similar needs in energy planning. The methodology for determining energy consumption and the business case template are intended to be applicable to both municipal objectives and the needs of the development industry.

Consistency with a community's broader sustainability objectives

The City has a broad range of policies in place for sustainability that integrate energy efficiency and alternative energy as complementary elements (see Attachment 5).

Other Information

Senior Management and/or Council Support for Energy Efficiency and Planning

As noted above under Evaluation Criteria, Surrey has a comprehensive policy framework in place that has been approved by Council. A corporate energy efficiency team has been formed and significant progress has been made towards implementing energy efficiency and alternative energy programs.

Budget and Timeline

The budget for this project will be \$20,000 for consulting services, exclusive of in-kind staff support. Staff will be working with the selected consultants to provide necessary project administration, data support and coordination between the Community Energy Plan and the City Centre Plan Update process. It is estimated that up to \$5000 in in-kind support will be provided.

It is proposed that consultants would be engaged by November 2006, a progress report would be submitted by 31 December 2006 and a project evaluation report would be delivered by March 2007.

Evaluation Plan

As a Community Energy Plan, evaluation would be based on monitoring the response of community stakeholders to the recommendations included in the plan. It is anticipated that the proposed business plan approach based on established precedents will encourage growing numbers of developments to incorporate energy efficiency and alternative energy into their designs over time.

Attachments

Attachment 1 – Surrey City Centre Study Area

Attachment 2 – *Contributing to Liveability Through Community Energy Planning: A Case Study of Surrey City Centre* is a 1996 overview report from BC Hydro which identifies the potential for extraordinary energy and cost savings that could be realized in Surrey City Centre if a range of best practices were applied over "business as usual" scenario.

Attachment 3 – Community Energy Policies. This summary, taken from the Council-adopted OCP, shows the high level of support for energy efficiency, alternative energy sources and good community planning to promote energy objectives.

Attachment 4 – Surrey 2006 Energy Aware Award Application. This application will demonstrate the wide range of energy efficiency measures and alternative energy practices that the City has initiated.

Attachment 5 – Community Sustainability and Environmental Policies. This summary, also taken from the Council-adopted OCP, shows the sustainability context for the City's energy policies.

City of Surrey Energy Policies

There is a close relationship between energy efficiency and the development of complete communities, which Surrey's Official Community Plan (OCP) defines as follows:

"Complete communities have a wide range of housing choice, opportunities for employment, business and investment opportunities, recreation, relaxation and a full range of services and leisure activities. In building complete communities, towns and neighbourhoods will be planned to accentuate their own distinct identity. Complete communities are lovable and energy efficient. Neighbourhoods will be designed to be a safe and attractive environment for residents to walk and cycle to a variety of places and activities close to home."

The OCP promotes the creation of Complete Communities, energy conservation and alternative energy sources:

"The City is committed to making Surrey "complete" at the City level and within the various towns and neighbourhoods. A complete community offers a wide range of business opportunities, local employment, housing choices, convenient services and viable alternatives to cars for transportation. The complete community concept also requires consideration of safety, a people-friendly built environment, and energy efficiency in planning and development."

The City supports energy conscious community planning and building design that makes communities more energy efficient, and supports all efforts to promote energy conservation and alternative energy sources which are environmentally friendly and sustainable."

The OCP calls for the consideration of energy efficiency at many levels:

"Promote energy efficiency as a factor for consideration in community planning and building designs, and support those land use and development options, transportation alternatives, built forms, energy alternatives and methods that increase energy efficiency and conservation."

The following policies will address issues regarding the efficient use of energy:

Build Energy Efficient Communities

"Efficient use of energy resources contributes to a cleaner and more sustainable environment. The City supports energy efficiency and conservation in the planning and design of communities."

Promote Energy Conscious Planning and Design

*"Efficient Use of Energy
Promote energy efficiency as a factor for consideration in community planning and building designs, and support those land use and development options, transportation alternatives, built forms, energy alternatives and methods that increase energy efficiency and conservation."*

Design Guidelines to Promote Energy-Conscious Planning

"Land use considerations:

- *Support small lot and common-wall residential developments that reduce the use of energy in building construction, heating and cooling.*
- *Support integrated developments of compatible residential, office, retail, institutional or low-impact industrial uses within the same site that could benefit from district heating/cooling or other energy saving schemes.*
- *Support the location of high density residential, commercial and institutional uses close to transit and encourage provision of transit services to areas of high density developments. Support the creation of dense, mixed use centres within walking distance from residential areas.*
- *Encourage the infill or redevelopment of properties to achieve a compact and compatible development at a higher density, subject to balancing other planning considerations."*

Street planning:

- *"Support a reduction in road pavement and street widths, with due consideration for safe vehicular movement.*
- *Support a street pattern that permits a maximum number of buildings and dwellings to be oriented in north-south direction to benefit from solar heat gain.*
- *Provide street trees and landscaping in medians and boulevards to reduce heat absorption by road surfaces and buildings, and increase opportunity for the natural absorption of storm water."*

Buildings and landscaping:

- *"Support mixed use buildings to allow shared energy use and waste recovery.*
- *Support dwelling unit designs that combine office or studio space and living space.*
- *Encourage building and landscaping designs to increase energy efficiency by responding to the local climate (for temperature moderation, shading, or wind channeling purposes).*
- *Encourage building designs that take advantage of natural skylight and solar gain as a way to reduce the need for artificial lighting and energy needs for heating.*
- *Encourage reduction in the amount of paved surfaces in outdoor areas to enhance natural drainage and reduce heat gain in summer.*
- *Encourage facilities for composting and recycling in buildings and developments to reduce energy needed for waste disposal.*

Energy supply, distribution and storage:

- *Encourage innovative ways to produce, supply, store and conserve energy at the town, neighbourhood and building levels, while ensuring that all innovative technologies are environmentally sound, and that they meet provincial and federal environmental standards.*

Consider the following:

- *Central heating, cooling or electricity plants to serve a group of buildings, a neighbourhood or a Town Centre.*

- *Supply of energy for heating, cooling and domestic hot water to individual buildings or projects from appliances, such as heat pumps, that use electricity or natural gas to extract heat from air, earth or river and ground water.*
- *Supply of energy from cells, such as photo voltaic cells, that produce electricity by chemical action when exposed to light, or fuel cells that convert the chemical energy of hydrogen or natural gas directly into electricity and heat.*
- *Energy conserving sewage treatment methods such as a hydroponic treatment plant where sewage is used as a nutrient solution for growing plants or where plants are used to clean waste water before it is discharged."*

Implementation Strategies

- *"Implement energy policies through Neighbourhood Concept Plans (e.g. consideration for locally based energy systems), review of development applications, design review and development permit guidelines. Encourage participation by B.C. Hydro, B.C. Gas and other appropriate agencies in the process of preparing Neighbourhood Concept Plans to include energy efficiency as a factor at an early stage in the Neighbourhood Concept Plan process, and to recommend appropriate ways to meet future energy needs in an efficient and environmentally sound manner.*
- *Review Zoning By-law provisions, Subdivision and Development By-law, building permit procedures and requirements, engineering standards and other major City policies and programs to support energy efficiency, conservation and innovative technologies for on-site energy production, supply and storage such as cogeneration, heat pumps, photo voltaic and fuel cells.*
- *Investigate ways to provide incentives for energy efficient developments.*
- *Include energy efficiency and conservation as factors in the early stages of City projects and use them to demonstrate and promote innovative concepts. Encourage other governments and public agencies to do the same.*
- *Promote or support energy audits, energy conservation and awareness programs and efforts to include energy efficiency requirements in building codes by other agencies.*
-

In the case of multiple building and mixed use developments, consider using alternative technologies for on-site energy production (photo voltaic and fuel cells, heat pump, etc.) provided that they meet the provincial and federal codes and the City's By-law or requirements."