

Implementing Yellowknife's  
Community Energy Plan



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Prepared for: City Council

Date: March 19, 2007

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## INTRODUCTION

The CEP planning process started in 1997 when the City of Yellowknife joined the Federation of Canadian Municipalities' (FCM) Partners for Climate Protection (PCP) program making a commitment to reduce its emissions. The CEP started to formalize with the creation of the Community Energy Planning Committee in March 2005. The committee was represented by Council, City staff, the Arctic Energy Alliance, members of local business and industry, and the general public. In September 2006, the CEP, produced by the CEP Committee was adopted for information by Council who advised Administration to develop the implementation strategy for the recommendations.

The CEP Implementation Strategy was developed through a collaborative effort within Administration. Each recommendation was assigned to the most relevant department, who worked with the Energy Coordinator to develop an implementation strategy for each recommendation. Directors met regularly to develop consensus.

The Implementation Strategy is considered an evolution of the CEP because not all recommendation have remained as they were written in the CEP. Some of the recommendation have been altered or removed to better represent administrations intended process for implementation.

Many of the City's intended actions for the implementation have overlaps between differing recommendations. For example the Smart Growth Redevelopment Plan will be used to integrate sustainable principles into the planning processes (Recommendation 5) as well as improving the walk-ability of the community (Recommendation 8e).

The 2007 City budget has allocated \$500,000 for the implementation of the CEP, but this amount does not represent the full cost of the Plans implementation. For example, the Smart Growth Redevelopment Plan is a prominent action of the implementing of the Plan but is not included in the CEP budget.

There are two sides to a climate change action plan; mitigation, which is reducing our impacts and the other side, is adaptation - developing ways of dealing with the changes climate change is creating. The CEP is the City's attempt to develop a mitigation strategy. The City is also working towards an adaptation strategy with the help of the Pembina Institute, who are attempting to building capacity in the area of risk assessment and decision making pertaining to adapting City processes related to the subject. The plan is being developed through three workshops and a final report to be presented in April 2007.

## IMPLEMENTATION SUMMARY

1. Put more emphasis on long-term (20 to 100 years) planning that includes life-cycle analysis of environmental, social and economic factors.

	Implementation Points	Start Date	Finish Date
i.	Conduct Life Cycle Costing (LCC) for all major capital projects/purchases.	Immediately	Ongoing
ii.	Smart Growth Redevelopment Plan will give consideration to triple bottom line variables in modeling process. (Economic, Social & Environmental)	2007	2012

2. Incorporate energy use and greenhouse gas emissions considerations into all aspects of the City's decision-making.

	Implementation Points	Start Date	Finish Date
i.	Energy/Emissions and LCC section to be added to Council Memorandum to Committee	Immediately	Ongoing

3. Adopt the following targets for energy reductions over the 2004 baseline levels:

- a. City operations – reduce emissions by 20% and energy use by 10% by 2014.

	Implementation Points	Start Date	Finish Date
i.	Commit to emissions and energy targets.	2007	Ongoing
ii.	Set electricity and overall thresholds for projects to accommodate.	2007	2007
iii.	Hire an energy auditor to identify and prioritize efficiency projects as part of the City's Energy Management Plan (Recommendation 6a)	2007	2007
iv.	Implement energy auditors report.	2007	Ongoing
v.	Present an annual report on City energy and emissions.	2008	Ongoing

- b. Entire community – reduce emissions by 6% by 2014.

	Implementation Points	Start Date	Finish Date
i.	Commit to support community emission reduction efforts.	2007	Ongoing
ii.	Calculate required actions to achieve targets.	2007	2007

iii.	Communicate targets to the community.	2007	Ongoing
iv.	Follow up baseline study.	2010	Ongoing

- c. Adopt a long-term (20-100 years) target for the entire community by 2014.

	Implementation Points	Start Date	Finish Date
i.	Develop a long-term target for the entire community (after baseline study) – City.	2010	2010

4. Create tools to implement and monitor progress of the CEP:

- a. Create a public committee to provide advice on the implementation of the CEP and periodically report to Council.

	Implementation Points	Start Date	Finish Date
i.	Develop Committee Terms of Reference	2007	2007
ii.	Identify committee members	2007	2007
iii.	CEP orientation session	2007 Spring	-
iv.	Meet semi annually in March and September	Ongoing	-

- b. Hire an Energy Coordinator until at least the end of 2010.

	Implementation Points	Start Date	Finish Date
i.	Budget for Energy Coordinator	2006	2006
ii.	Request permission to use Gas Tax funding for position.	2006	2007 Feb
iii.	Hire Energy Coordinator on a two-year term	Feb. 2007	Feb. 2009
iv.	Assess need for Energy Coordinator and extend position to the end of 2010 if required.	2009	2010

5. Adopt sustainable energy planning guidelines based on the 21 principles in the “Definition of Sustainable Planning Principles” report and provide this report to City Administration for use in the Planning and Development Department’s development of overall Sustainable Planning Principles.

	Implementation Points	Start Date	Finish Date
i.	Incorporate sustainable principles into Smart Growth Redevelopment Plan’s Terms of Reference	2006	Ongoing

6. City of Yellowknife lead by example on energy and climate change.

a. Continuously improve efficiency of all City facilities.

	Implementation Points	Start Date	Finish Date
i.	Develop and implement an Energy Management Plan with an emission reducing focus.	2007	Ongoing
ii.	Develop a payback period threshold to ensure emission reductions remain a focus.	2007	2007

b. Monitor locally installed woodpellet boilers to determine if the City should install a biomass boiler in one of its own facilities in 2008.

Alternative Recommendation to CEP

	Implementation Points	Start Date	Finish Date
i.	Monitor installed woodpellet systems	Jan. 2007	July 2007
ii.	Make decision in 2007 to implement in 2008 if favorable.	July 2007	Summer 2008
iii.	Promote woodpellet systems in the community if favorable.	2008	Ongoing

c. Pursue renewable energy options within City operations with the goal of reducing heating oil as a fuel source.

	Implementation Points	Start Date	Finish Date
i.	Make commitment to reduce energy	2006	Ongoing
ii.	Monitor Woodpellet Boilers	2007	2007
iii.	Monitor Ground Source heat pump application in Yellowknife	2007	2010
iv.	Feasibility Study of Con Mine External funding sources are being pursued	2007	2009

d. Require all new City facilities to meet or exceed the requirements of the Commercial Buildings Incentive Program (CBIP), which requires the building to be at least 25% more efficient than the Model National Energy Code for Buildings (MNECB).<sup>1</sup>

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<sup>1</sup> The CBIP is a federal program that may not be renewed in 2007/08. The primary criteria for complying with the program are energy improvements of 25% better than the Model National Energy Code and the use of an integrated design process.

	Implementation Points	Start Date	Finish Date
i.	The City will use the criteria required to comply with the CBIP standard when designing and building new commercial facilities.	2006	Ongoing

e. Implement into City fleet operations the following:

i. Purchase a demonstration fuel-efficient vehicle such as a Smartcar or Hybrid

	Implementation Points	Start Date	Finish Date
i.	Monitor performance/reliability of GNWT's Smartcar and Hybrid.	2007	2007
ii.	Purchase Smartcar or Hybrid for demonstration purposes.	2008	N/A

ii. All vehicles purchased should be in the top 10% of efficiency for the lowest emission vehicle class available, which will meet operational requirements.

	Implementation Points	Start Date	Finish Date
i.	Include LCC in vehicle tendering process	2006	Ongoing

iii. Fuel efficiency driver training program.

	Implementation Points	Start Date	Finish Date
i.	Provide staff, that drive regularly as part of their daily duties, with driver training	2007	Ongoing

f. Require EnergyStar appliances/office products for all new purchases.

	Implementation Points	Start Date	Finish Date
i.	Develop EnergyStar purchasing policy	2007	Ongoing

g. Create an internal funding mechanism to fund renewable energy and energy efficiency projects that reduce greenhouse gas emissions.

	Implementation Points	Start Date	Finish Date
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i.	Establish a Community Energy Plan reserve	2007	2007
ii.	Transfer \$365,000 annually to reserve	2007	2010
iii.	Define spending parameters of fund	2006	2007
iv	Extend annual contribution to fund past 2010 if Gas Tax Agreement is extended.	2010	Ongoing

7. Consult public on how to implement efficient building standards and incorporate as appropriate into the City's building by-law:

- a. Consult public on how to implement EGH-80 as a standard for new residential construction.

Alternative Recommendation to CEP

	Implementation Points	Start Date	Finish Date
i.	Planning & Development is developing an implementation process. First step will be public consultation.	2007	Undefined

- b. Consult public on how to implement the CBIP2 design process as a standard for new commercial construction.

Alternative Recommendation to CEP

	Implementation Points	Start Date	Finish Date
i.	Planning & Development is developing implementation process. First step will be public consultation through the Smart Growth Redevelopment Plan.	2007	Undefined

- c. Use EnergyStar as a standard for appliances in all new residential construction.

Alternative Recommendation to CEP

	Implementation Points	Start Date	Finish Date
i.	Planning & Development is developing an implementation process. First step will be public consultation.	2007	Undefined

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<sup>2</sup> The CBIP is a federal program that may not be renewed in 2007/08. The primary criteria for complying with the program are energy improvements of 25% better than the Model National Energy Code and the use of an integrated design process.

8. Implement measures to encourage active transportation and transportation efficiency:

- a. Follow the implementation schedule passed by Council contained in the 2005 Integrated Parks, Trails & Open Spaces Study.

Alternative Recommendation to CEP

	Implementation Points	Start Date	Finish Date
i.	Follow the Trails Study implementation process as passed by Council.	Ongoing	2015
ii.	Smart Growth Redevelopment Plan will integrate trail development and preservation into future developments.	Ongoing	Ongoing

- b. Encourage hybrid taxis.

Alternative Recommendation to CEP

	Implementation Points	Start Date	Finish Date
i.	Promote the benefits of hybrids to taxi companies	2007	Ongoing
ii.	Amend the Livery License Bylaw to extend hybrid taxi operating life by one year	2007	2007

- c. Support public transit while continuing to explore opportunities to increase efficiency and effectiveness.

	Implementation Points	Start Date	Finish Date
i.	Complete transit marketing study	2007	2007
ii.	Develop Workplan based on transit marketing study which would include: Route Evaluation Revising Schedule	2007	2007
iii.	Apply to the Public Transit Fund under the new deal for Cities and Communities	2007	2007
iv.	Tender Transit System Services	2007	2007
v.	Ensure future developments give consideration to transit issues through the Smart Growth Redevelopment Plan	2007	Ongoing

- d. Make the City's fuel efficiency driver training program available to the public after it is established.

	Implementation Points	Start Date	Finish Date
i.	Not recommended the City offer a public drivers training course.	N/A	N/A
ii.	The City will encourage Department of Transportation to incorporate efficient driving habits into existing drivers training program.	2007	N/A

- e. Implement specific measures to make cycling and walking easier such as the creation of bike lanes and improved maintenance of sidewalks and walking trails.

	Implementation Points	Start Date	Finish Date
i.	Implement Integrated Parks, Trails and Open Space Development Study	2005	2015
ii.	Work with Ecology North's Transportation Issues Committee on improving cycling routes	2007	2007
iii.	Incorporate pedestrianism into Smart Growth Redevelopment Plan	2007	2009
iv.	Continue pedestrian friendly infrastructure upgrades	Ongoing	

- f. Investigate ways of strengthening the Yellowknife anti-idling by-law.

	Implementation Points	Start Date	Finish Date
i.	The City will look at ways to strengthen the by-law	2008	2008

9. Promote action from other orders of government

- a. Create a green financing mechanism for residents and businesses.

	Implementation Points	Start Date	Finish Date
i.	Support ITI (GNWT) in their effort to develop a green financing program.	2006	2007

- b. Lobby GNWT to make bio-fuels available in the NWT as they become available in the Canadian market place.

	Implementation Points	Start Date	Finish Date
i.	Monitor the availability of bio-fuels.	2007	Ongoing

- c. Support other governments, such as Health Canada and GNWT Health, in promotion of daily exercise such as walking.

	Implementation Points	Start Date	Finish Date
i.	Support other governments in the promotion of exercise such as walking.	2008	Ongoing

10. Form local and regional energy partnerships.

- a. Partner with local utilities and building owners (including other levels of government) to facilitate an early start to construction of a new hydroelectric station on the Snare system so that hydro-electricity can be used to replace fossil fuels.

	Implementation Points	Start Date	Finish Date
i.	Express interest to the NWT Power Corporation.	2007	N/A

- b. Partner with local businesses, including northern mines, to draw on their expertise in energy management.

	Implementation Points	Start Date	Finish Date
i.	Contact mining companies to be involved with the CEP Implementation Committee	2007	N/A

11. Inform the public about Yellowknife's CEP and share the success stories and innovation actions that the City is taking.

	Implementation Points	Start Date	Finish Date
i.	Develop an updated work plan using the communications plan developed for the CEP	March 2007	N/A
ii.	Implement work plan	Spring 2007	Ongoing
iii.	Annual Progress Report	2008	Ongoing

12. Pilot a green financing program for City home owners that focuses on reducing the use of fossil fuels for home heating.

	Implementation Points	Start Date	Finish Date
i.	Not recommended to implement	N/A	N/A
ii.	City will encourage the GNWT in their efforts to implement green financing program (9a)	2006	Ongoing

## 1 – LONG-TERM PLANNING

### RECOMMENDATION 1 – LONG-TERM PLANNING

#### **1. Put more emphasis on long-term (20 to 100 years) planning that includes life-cycle analysis of environmental, social and economic factors.**

Planning for Climate Change requires thinking more than 20 years ahead because actions today will have effects up to 100 years from now. Although planning far into the future is not precise, the City will put more emphasis on planning 20 – 100 years ahead.

Using standardized life-cycle analyses allows the City to identify opportunities to invest in energy saving that will result in reduced operational expenses over the life of a project.

- I. Fully Implement
- II. Department Stakeholders – All Departments
- III. Community Stakeholders - N/A
- IV. End Result Focus – Internal City Operations
- V. Financial Impact
  - a. Cost to Implement
    - No direct costs associated with adopting principles.
  - b. Annual Financial Impact
    - The use of life-cycle analysis may increase the initial cost of projects but will improve the financial health of the City by reducing operating costs over the long term. Giving consideration to social and environmental criteria may increase the cost of projects, although it is recognized that such considerations could benefit the community and may have indirect long-term financial gains.
    - \$175,000 has been allocated in the 2007 City Budget for the development of the Smart Growth Redevelopment Plan (SGRP); additional funding sources have been pursued that could bring the total funding of the plan to \$600,000. The long-term modeling, as outlined in this implementation process, requires the external funding sources to be secured.
- VI. Energy/Greenhouse Gas Impacts
  - a. There is potential to facilitate large reductions over the long-term, both from City operations and the whole community.
- VII. Implementation Process
  - a. The City will include Life Cycle Costing (LCC) for all large capital purchase/projects and will ensure this information is presented to Council (Recommendation 2).
    - The City will design all future buildings using the CBIP planning process, which requires a LCC analysis to compare different design options. The City is committed to investing in options that will reduce a project's LCC (Recommendation 6d).

## 1 – LONG-TERM PLANNING

- The City has introduced LCC into the tendering process for the purchase of its fleet. Fuel efficiency is now an important criteria in the purchasing of new vehicles and heavy equipment (Recommendation 6e (ii)).
  - The City is investing in variable speed pumps in its facilities. It is a proven way to significantly reduce demand charges over the life of the pump.
- b. The Planning and Development Department will be using sustainable planning principles in their proposed Smart Growth Redevelopment Plan (Recommendation 5 – Sustainable Planning Guidelines). The Plan will be creating a long term vision for the community and intends to use (hinging on available budget) modeling software called MetroQuest to forecast future growth scenarios over the next 20 -50 years. This software is capable of assessing social, environmental and economic inputs when producing a proposed scenario (Recommendation 5).

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Conduct Life Cycle Costing for all major capital projects/purchases.	Immediately	Ongoing
ii.	Smart Growth Redevelopment Plan will give consideration to triple bottom line variables in modeling process. (Economic, Social & Environmental)	2007	2012

## 2 – DECISION-MAKING

### RECOMMENDATION 2 – DECISION MAKING

#### 2. Incorporate energy use and greenhouse gas emissions considerations into all aspects of the City’s decision-making.

Many of the decisions that Council makes will directly or indirectly impact the City’s greenhouse gas emissions. Councilors should be provided with information on the energy use and greenhouse gas impacts of issues that come before Council.

- I. Fully Implement
- II. Department Stakeholders – All
- III. Community Stakeholders - N/A
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - No direct costs associated with adopting principles.
  - b. Annual Financial Impact
    - Decision makers will have a more thorough understanding of the energy impacts of decisions.
- VI. Implementation Process
  - a. The City will add an Energy/Emissions and Life Cycle Costing analysis sections to the memo to Committee’s template.
- VII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Energy/Emissions and LCC section to be added to Council Memorandum to Committee	Immediate	Ongoing

### 3 – TARGETS

#### RECOMMENDATION 3 – TARGETS

#### 3. Adopt the following targets for energy reductions over the 2004 baseline levels:

##### a. City operations – reduce emissions by 20% and energy use by 10% by 2014.

- I. Fully Implement
- II. Department Stakeholders – All
- III. Community Stakeholders - None
- IV. End Result Focus – Internal City Operation
- V. Financial Impact
  - a. Cost to Implement – \$500,000
    - The \$500,000 CEP’s budget is financed from Gas Tax funding and is broken into four line items:
      - Communications - \$25,0000 – Internal/Community
      - Energy Coordinator - \$75,000 - Internal/Community
      - Implementation Fund - \$35,000 – Internal/Community
      - Energy Efficiency Fund - \$365,000 – Internal
    - The funding will be used for both community and City emission reductions, but the Energy Efficiency Fund will be exclusive to achieving City emission reductions.
  - b. Annual Financial Impact
    - The City expects the average payback period for the projects implemented in the energy management plan to be eight years. If the City invests \$365,000 annually on energy efficiency projects it can expect to save \$320,000 annually by 2014 or a ten percent improvement.

	Year 1	Year 7
Year	2007	2014
Avg. Project Payback	8	8
Retrofitting Budget	\$365,000	\$2,555,000
Annual Savings Expected	\$45,625	\$319,375
Annual Energy Expenditure *	\$3,000,000	\$3,000,000
Percentage Improvement	1.5%	10.6%

\* assuming energy expenditures stay the same.

- VI. Background
  - a. When developing a strategy to achieve an emissions reduction target it is important to understand the local power supply is produced by emissions free hydro. The result is electricity based efficiency projects will not contribute to achieving the target but are generally the most attractive financial investment. One of the guiding principles of the CEP is to address the rising cost of energy, but cannot be met by only focusing on reducing emissions.

### 3 – TARGETS

- b. The addition of an energy reduction target will allow electricity projects to be implemented, while allowing the energy management plan to have an emission based focus. To achieve this, an electricity payback threshold will have to be established, in addition to a second overall payback threshold that all projects will meet. All electricity based projects with a payback within the electricity threshold will be implemented, but only emission reducing projects with paybacks within the overall threshold will be implemented. The combined target method will allow the City to be financially prudent while still focusing on reducing emissions.

#### VII. Implementation Process

- a. The City commits to reducing emissions by 20% and energy use by 10% by 2014, within City operations.
- b. Set a maximum payback threshold for electricity projects and a second overall threshold that all projects must accommodate. All energy retrofits (electrically or fuel based) with a payback less then the electricity threshold will be implemented, but only fuel based projects with paybacks within the overall threshold will be implemented.
- c. Hire an energy auditor to identify and prioritize efficiency projects as part of the City’s Energy Management Plan (Recommendation 6a).
- d. Implement energy auditors report.
- e. Present an annual report on City energy use.

#### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Commit to emissions and energy targets.	2007	Ongoing
ii.	Set electricity and overall thresholds for projects to accommodate.	2007	2007
iii.	Hire an energy auditor to identify and prioritize efficiency projects as part of the City’s Energy Management Plan (Recommendation 6a)	2007	2007
iv.	Implement energy auditors report.	2007	Ongoing
v.	Present an annual report on City energy and emissions.	2008	Ongoing

#### **b. Entire community – reduce emissions by 6% by 2014**

- I. Fully Implement
- II. Department Stakeholders – All
- III. Community Stakeholders - Entire Community
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement – \$135,000
    - A portion of this money will be used to fund internal City of Yellowknife reductions.

### 3 – TARGETS

- Communications - \$25,0000 – Internal/Community
- Energy Coordinator - \$75,000 - Internal/Community
- Implementation Fund - \$35,000 – Internal/Community
- Annual Financial Impact
  - There is no direct annual cost to achieving this target other than the above listed expenditures.

#### VI. Rational/Background

a. The City recognizes it has tools to facilitate energy reductions within the community including:

- Urban design – Smart Growth Redevelopment Study, 2007/08
- Transportation
  - Transit (Recommendation 8)
  - Pedestrian Traffic
    - ⇒ Accessible Biking – Ecology North, 2007 (Recommendation 8e)
    - ⇒ Implementing the Integrated Parks, Trails and Open Space Development Study (Recommendation 8a).
    - ⇒ City Sidewalk and trail projects (Recommendation 8e)
  - Taxis – encourage hybrid taxis, 2007 (Recommendation 8b)
- Building Standards (Recommendation 7)
  - Residential – EGH-80
  - Commercial – CBIP
  - Appliances – Energy Star
- Lead by Example – Energy Management Plan (Recommendation 6a)
- Lobby Government/Private Sector- Green Financing (Recommendation 10)
- Communications - Encourage the Community to take action. (Recommendation 11)

b. Other than the above listed actions the City does not have direct influence in addressing emissions within the community and will require public buy-in in order to meet any proposed targets. The Communications plan will play an important role in getting this buy-in.

c. The community is growing in population and emissions are expected to increase by close to 19% by 2015. A 6% reduction target by 2014 is actually closer to 25% if growth projections are considered.

#### VII. Implementation Process

- a. The City commits to supporting the community in its effort to reduce emissions by 6% over 2004 levels by 2014.
- b. The City will develop a scenario to show what the community needs to do to meet the targets. For example, the number of homes and buildings that need to be retrofitted to meet target.
- c. Communicate to the community the CEP targets and required actions need to achieve them.

### 3 – TARGETS

- d. The City will conduct a follow-up baseline study in 2010 for the 2009 year and in 2015 for the 2014 year.

#### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Commit to support community emission reduction efforts.	2007	Ongoing
ii.	Calculate required actions to achieve targets.	2007	2007
iii.	Communicate targets to the community.	2007	Ongoing
iv.	Follow up baseline study.	2010	Ongoing

#### c. Adopt a long-term (20-100 years) target for the entire community by 2014.

- I. Fully Implement CEP Recommendation
- II. Department Stakeholders – All
- III. Community Stakeholders - Entire Community
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement – No Direct Costs
  - b. Annual Financial Impact – No Direct Costs
- VI. Implementation Process
  - a. The City will develop long range emissions reduction targets for the City in 2010 after the second baseline study is completed.
- VII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Develop a long-term target for the entire community (after baseline study) - City	2010	2010

## 4 – IMPLEMENTATION TOOLS

### RECOMMENDATION 4 – IMPLEMENTATION TOOLS

#### 4. Create tools to implement and monitor progress of the CEP:

Hiring an Energy Coordinator and creating an Implementation Advisory Committee will ensure the City has sufficient resources to implement CEP and ensure the process evolves.

#### a. Create a CEP Implementation Advisory Committee to assist the City in an advisory capacity and increase public awareness to reduce energy consumption in the community;

- I. Fully Implement
- II. Department Stakeholders – All
- III. Community Stakeholders - Committee Members
- IV. End Result Focus – Community & Internal City
- V. Financial Impact
  - a. Cost to Implement
    - There is minimal financial impact to creating an committee
  - b. Annual Financial Impact
    - Administration will require time to participate in the CEP implementation working group.
- VI. Background
  - a. The CEP Implementation Advisory Committee will:
    - Monitor the progress of implementation of the CEP.
    - Report and make recommendations to City Council through the Municipal Services Committee (MSC) on the progress and direction of the CEP implementation.
    - Ensure the CEP continues to represent all stakeholders in the community.
    - Ensure the CEP evolves with advances in technology, best practices and changes in the community.
- VII. Implementation Process
  - a. Develop Committee Terms of Reference
  - b. Identify and invite committee members to CEP orientation session in Spring of 2007.
  - c. Convene committee on semi annual bases in March and September.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Develop Committee Terms of Reference	2007	2007
ii.	Identify committee members	2007	2007
iii.	CEP orientation session	2007 Spring	-
iv.	Meet semi annually in March and September	Ongoing	-

## 4 – IMPLEMENTATION TOOLS

### b. Hire an Energy Coordinator until at least the end of 2010.

- I. Fully Implement
- II. Department Stakeholders – Department of Public Works and Engineering
- III. Community Stakeholders - None
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement – N/A
  - b. Annual Financial Impact
    - \$75,000 has been allocated in the 2007 budget for the position. This money is part of the \$500,000 CEP implementation budget supplied by Gas Tax funding.
- VI. Background
  - a. An energy coordinator has been working on contract since the fall of 2005.
  - b. The 2007 City budget included \$75,000 to hire an energy coordinator. This funding was also included in the 2008 and 2009 financial projections.
  - c. MACA has given permission to use Gas Tax funds to hire an Energy Coordinator.
- VII. Implementation Process
  - a. Include an energy coordinator salary in the City’s budgeting process through 2010.
  - b. Request permission from MACA to use Gas Tax funds to support the Energy Coordinator position.
  - c. Hire an Energy Coordinator in February 2007 on a two-year term.
  - d. Evaluate the Energy Coordinator’s role in 2009 to determine the need for the position. If required, the Coordinator position will be extended to the end of 2010.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Budget for Energy Coordinator	2006	2006
ii.	Request permission to use Gas Tax funding for position.	2006	2007 Feb
iii.	Hire Energy Coordinator on a two-year term	Feb. 2007	Feb. 2009
iv.	Assess need for Energy Coordinator and extend position to the end of 2010 if required.	2009	2010

**RECOMMENDATION 5 – SUSTAINABLE PLANNING GUIDELINES**

**5. Adopt sustainable energy planning guidelines based on the 21 principles in the “Definition of Sustainable Planning Principles” report and provide this report to City administration for use in the Planning and Development Department’s development of overall Sustainable Planning Principles.**

Community energy use and planning practices are closely linked. Adopting sustainable planning principles will ensure future planning gives consideration to energy use.

- I. Fully Implement
  - a. Please consult the CEP’s “Definition of Sustainable Planning Principles” report for a better understanding of the 21 principles.
- II. Department Stakeholders – Planning and Development
- III. Community Stakeholders - Whole Community
- IV. End Result Focus – Community & Internal City
- V. Financial Impact
  - a. Cost to Implement
    - \$175,000 has been allocated in the 2007 City Budget for the development of the Smart Growth Redevelopment Plan (SGRP); additional funding sources have been pursued that could bring the total cost of the plan to \$600,000.
  - b. Annual Financial Impact
    - The implementation of the SGRP will require capital and operational investments that are not clearly defined at this point. The SGRP aims to provide Class D estimates for all major projects.
- VI. Implementation Process
  - a. The Planning and Development (P&D) Department will incorporate most of these principles into its Smart Growth Redevelopment Plan (SGRP) and future developments. Many of the twenty-one principles are represented in the implementation of the twelve recommendations in the CEP. A further explanation of how the City will incorporate the principles into its operation can be found below.

**Recommendations for Overall City Planning:**

**Principle One: Develop a 50-100 year community vision and plan**

- Part of the SGRP through the use of Metroquest software (dependent on FCM funding)

**Principle Two: Learn from historical patterns of development**

- Part of the terms of reference for the SGRP.

**Principle Three: Make energy demand and GHG emissions reductions and life-cycle analysis the norm for decision making.**

## 5 – SUSTAINABLE PLANNING GUIDELINES

- See Recommendation 2 of the CEP.

### **Principle Four: Put in place a more effective, integrative, participatory planning process**

- An integrated public consultation process is a key principle of the Planning and Development Department as well as the SGRP.

### **Principle Five: Re-investigate and re-invest continually**

- The Planning and Development Department will adopt this principle into the everyday responsibilities and decision-making process.

### **Principle Six: Respect the local and regional ecology**

- Part of the terms of reference for the SGRP and future developments in conjunction with the previous studies.

### **Recommendations on Community Form:**

#### **Principle One: Encourage a mix of housing, shops, offices etc.**

- Part of the terms of reference for the SGRP

#### **Principle Two: Pursue opportunities for residential infill**

- Based on the General Plan and Downtown Plan the SGRP target's 25% of all future housing to be built in the city core.

#### **Principle Three: Create a town center/ strong downtown**

- Important part of the SGRP.

#### **Principle Four: Preserve green spaces in the community**

- Important part of the SGRP.

#### **Principle Five: Control parking/ road footprints**

- The Planning and Development Department will investigate further.

#### **Principle Six: Promote and pilot sustainable neighborhood design and retrofit**

- Niven Lake Phase 7 and 8 will incorporate sustainable principles into the neighborhood design. Tin Can Hill will use sustainable principles at the beginning of the design process and is envisioned to be a sustainable neighborhood.

### **Recommendations on Transportation:**

#### **Principle One: move away from car-oriented development and focus on “quality of life”**

- The City will work on improving the pedestrian friendly design and activities by implementing Recommendation 8. Pedestrian friendly urban design will also be part of the SGRP.

## 5 – SUSTAINABLE PLANNING GUIDELINES

### **Principle Two: Invest and innovate in public transit**

- The City will work to improve public transit by implementing Recommendation 8c. The SGRP will touch on Transit Oriented Design, however it is envisioned that the Public Works & Engineering Department will address this via a transit study

### **Principle Three: Create and maintain a space for active transportation**

- The City will continue to implement the recommendation in the Integrated Parks, Trails and Open Space Development Study – Recommendation 8a - and maintain the existing trail system. The SGRP will look at integration of the trail system to the streetscape.

### **Principle Four: Encourage connectivity and make it easy for people to get from one place to another.**

- The recommendations in the Integrated Parks, Trails and Open Space Development Study encourage this activity. It will also be part of the terms of reference for the SGRP.

### **Recommendations on Building Design:**

#### **Principle One: Use energy efficient components in buildings**

- The City will be implementing Recommendation 7 which deals with both residential and commercial building standards.

#### **Principle Two: Build with the landscape and natural features**

- Greenfield standards will be introduced as part of the SGRP to preserve existing topography and natural features.

#### **Principle Three: Treat “waste” as a resource**

- The City is considering this initiative.

#### **Principle Four: Encourage development of renewable energy**

- All new residential development will be encouraged to incorporate passive solar components into the construction. See Recommendation 6c for additional activities.

#### **Principle Five: Develop upfront sustainability codes and standards and build them into the development permitting process**

- Build Green, EnerGuide, Commercial Building Incentive Program (CBIP) and LEED (Leadership in Energy and Environmental Design) are all being considered in Recommendation 7.

## 6 – THE CITY LEAD BY EXAMPLE

### RECOMMENDATION 6 – THE CITY LEAD BY EXAMPLE

#### 6. City of Yellowknife lead by example on energy and climate change

The City is facing two challenges related to its energy use emissions reduction targets and rising costs. City emissions are expected to grow as the City expands its services to meet the demands of a growing community and energy prices are predicted to increase. The actions proposed in Recommendation 6 are seen as a way to address both emission reductions and insulate the impact of rising energy prices on tax payers by investing in energy efficiency.

##### a. Continuously improve efficiency of all City facilities.

- I. Fully Implement
- II. Department Stakeholders – All Departments
- III. Community Stakeholders – Not Directly Effected
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - \$365,000 of the CEP’s \$500,000 budget is earmarked for energy efficiency projects within City operations. (Recommendation 6g)  
All funds allocated to the CEP are from Gas Tax funding.
  - b. Annual Financial Impact
    - An annual financial investment of \$365,000 is in the budget for 2007 – 2009 in an attempt to meet the City’s target of reducing emissions by 20% and energy use by 10% by 2014.
    - The City expects the average payback period for the projects implemented in the energy management plan to be eight years. If the City invests \$365,000 annually on energy efficiency projects it can expect to save \$320,000 annual by 2014 or a ten percent improvement.

	Year 1	Year 7
Year	2007	2014
Avg. Project Payback	8	8
Retrofitting Budget	\$365,000	\$2,555,000
Annual Savings Expected	\$45,625	\$319,375
Annual Energy Expenditure *	\$3,000,000	\$3,000,000
Percentage Improvement	1.5%	10.6%

\* assuming energy expenditures stay the same.

- VI. Background
  - a. The City is vulnerable to energy price fluctuations and energy efficiency improvements are a way to reduce vulnerability. Power prices are expected to increase by 20% to 23% in the near future, this will add

## 6 – THE CITY LEAD BY EXAMPLE

\$400,000 to the City’s operating budget and is equivalent to a 2.4% increase in taxes.

- b. The City has made efforts to reduce energy in its operation resulting in significant increases in energy efficiency over the years. For a list-implemented energy, reduction measures at the City refer to Appendix A entitled “Efforts to Improve Energy Performance”.

### VII. Implementation Process

- a. The City will develop an energy management plan to continuously improve the efficiency of the City’s operation with an emphases on emission reductions. The plan will develop a systematic approach to energy management and will use many of the recommendations in the CEP as component parts to the plan. An energy management process can be broken down into seven steps and is illustrated in a diagram below. Many of the steps are also recommendations in the CEP.

#### **Step 1 – Make Commitment**

- Create Energy Coordinator Position
- Establish an Energy Team
- Institute an Energy Policy

#### **Step 2 – Assess Performance**

- Collect energy use information
- Establish Baselines and Benchmarks
- Analysis and Evaluate – i.e. Audits

#### **Step 3 – Set Goals**

- Identify organizational and time parameters of goals
- Estimate potential for improvement
- Establish Goals

#### **Step 4 – Create Action Plan**

- Define technical steps and targets
- Get buy-in from management

#### **Step 5 – Implement Action Plan**

- Create a communication plan
- Build capacity
  - a. Motivate
  - b. Track and monitor

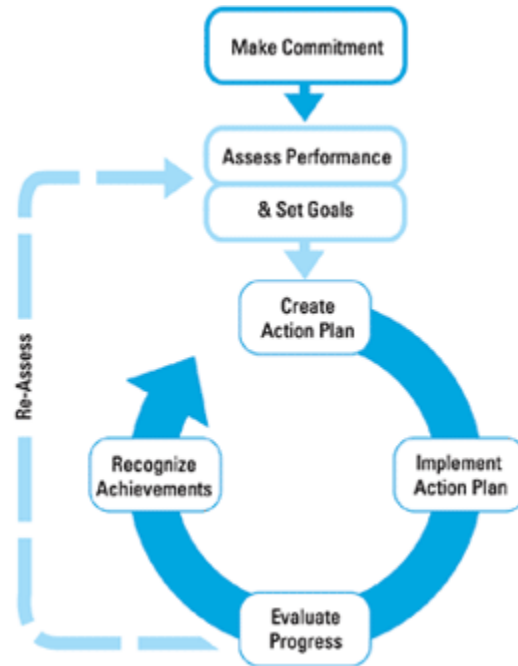
#### **Step 6 – Evaluate Progress**

- Measure results to established goals
- Review action plan

#### **Step 7 – Recognize Achievements**

- Provide internal recognition
- Promote achievements externally

## 6 – THE CITY LEAD BY EXAMPLE



- b. The energy management plan will use the targets established in recommendation 3a as a guiding principal that will influence the projects implemented. The plan will have an emissions based focus but will accommodate the most financially attractive electrical based projects that do not contribute to emissions reductions. A base payback threshold will be established that will allow any type of energy efficiency project to be implemented that has a payback less then the threshold, but only emission reducing projects with paybacks greater then the threshold will be implemented. For example, if a four year threshold was established, then a lighting retrofit with a payback less then four years would be implemented, but would be disallowed if the payback was greater then the four year threshold. However, a furnace upgrade that reduces emissions with a payback greater then four years could be implemented.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Develop and implement an Energy Management Plan with an emission reducing focus.	2007	Ongoing
ii.	Develop a payback period threshold to ensure emission reductions remain a focus.	2007	2007

### **b. Monitor locally installed woodpellet boilers to determine if the City should install a biomass boiler in one of its own facilities in 2008.**

#### I. Alternative Action to CEP Recommendation

## 6 – THE CITY LEAD BY EXAMPLE

- a. The CEP recommends, “Initiate a wood pellet heating pilot project in a City facility”. The City has the opportunity to monitor the effectiveness of two locally installed boilers before investing. The City is monitoring the local as well as its own capacity to maintain the new systems. Long-term pellet supply and air quality issues will also be monitored.
- II. Department Stakeholders – Public Works & Engineering, Community Services, Corporate Services
- III. Community Stakeholders – two local woodpellet suppliers
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - The City has two options when considering a woodpellet boiler. It can purchase the boiler outright and purchase pellets from a supplier. This option will require a capital investment of between \$200,000 to \$350,000. The second option would be to have a boiler installed at a City facility by a local supplier and pay for heat. This option requires little or no financial commitment.
  - b. Annual Financial Impact
    - The Renewable Energy Technology report prepared for the CEP indicates woodpellet boilers have an estimated six year payback period when installed in a new facility. The payback period will increase in a retrofit project.
    - The option to purchase the boiler outright would be the most attractive financial option when only looking at reducing heating costs. The City could reduce a particular facilities heating budget by 25% to 40% depending on a variety of factors. The purchase heat scenario varies from no direct savings when oil prices are low to a \$0.10 reduction per liter of oil when the price of oil is high.
- VI. Background
  - a. There are woodpellet boilers installed in two local facilities, one in the North Slave Correctional Centre and a second woodpellet district heating system at Bison Apartments.
  - b. The City has received expressions of interest to supply woodpellets to its facilities from two different suppliers.
  - c. A woodpellet boiler has been included in one of the design options for the proposed Fieldhouse.
  - d. Woodpellet heating is considered greenhouse gas neutral making significant emissions reductions possible.
- VII. Implementation Process
  - a. The City will monitor the installed boilers to determine if a pellet system should be installed in a City facility. The City will evaluate the boilers reliability, the pellet supply, local capacity to maintain the system, economics and effects on air quality. Project managers for the boiler system at the Corrections facility from the GNWT have agreed to work

## 6 – THE CITY LEAD BY EXAMPLE

with the City to provide independent information on their systems performance.

- b. The City will determine in 2007 whether to invest in a woodpellet boiler to be installed in 2008. A facility will be chosen based on building system compatibility, aesthetics and economies of scale.
- c. If the City determines that a woodpellet system is favorable it will encourage other facilities within the community to convert or install in their new construction.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Monitor installed woodpellet systems	Jan. 2007	July 2007
ii.	Make decision in 2007 to implement in 2008 if favorable.	July 2007	Summer 2008
iii.	Promote woodpellet systems in the community if favorable.	2008	Ongoing

### c. Pursue renewable energy options within City operations with the goal reducing heating oil as a fuel source.

- I. Alternative Action to CEP Recommendation
  - a. The CEP recommendation adopting a goal of “replacing heating oil as a fuel source by 2014”. The City will make an effort to reduce heating oil from its facilities but does not expect to replace heat oil entirely within the 2014 time period.
- II. Department Stakeholders – Public Works & Engineering, Community Services, Corporate Services
- III. Community Stakeholders – N/A
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - The City considers renewable energy technology to be a form of energy efficiency and will be financed through the \$365,000 Energy Efficiency Fund. All funds allocated to the CEP are from Gas Tax funding.
    - If the City decides to install a woodpellet boiler it will require a capital investment of between \$0.00 and \$350,000 depending on who owns the boiler system.
    - A feasibility study of Con Mine will cost the City \$25,000 to \$50,000. The study hinges on the availability of external funding to finance the estimated \$250,000 study/business case.
  - b. Annual Financial Impact
    - The City intends to make a \$365,000 annual investment to support energy efficiency projects.

## 6 – THE CITY LEAD BY EXAMPLE

- The City estimates that they could save \$319,000 annually by 2014 if it invests in energy efficiency.

### VI. Background

- a. The City has built capacity in-house to do pre-feasibility analyses of renewable energy projects by attending the RETScreen - Clean Energy Project Analysis Seminar. City is capable of analyzing potential renewable energy projects to determine which projects require additional analysis by professionals.

### VII. Implementation Process

- a. The City commits to improving the energy efficiency of its facilities in an economically responsible manner and will include renewable energy options as a way to reduce the City's reliance on oil based energy. The City will continually monitor the economies of renewable energy options at City facilities. The economic feasibility of renewable energies is continuously improving as their efficiency improves, prices are reduced and the price of competing energy increases.
- b. The City is monitoring the two woodpellet boilers installations in town to determine the viability of using woodpellets in its' own facilities. Recommendation 6b – Woodpellet Boilers in City Facilities.
- c. A local home builder is installing a ground source heating systems to test the viability of such a system in Yellowknife. The heating system is expected to be installed in 2007 and the City will monitor the technical and economic viability of such a system for its facilities. It is generally recognized that a subsidized power rate will be required in order to make this heating source an option in Yellowknife, as well as will require the expansion of our present hydro grid to be environmentally sustainable.
- d. The City will study the viability of Con Mine as a space heating source to be used by both City operations and the community at large. The City is applying to the Federation of Canadian Municipalities to contribute funds for a feasibility study.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Make commitment to reduce energy	2006	Ongoing
ii.	Monitor Woodpellet Boilers	2007	2007
iii.	Monitor Ground Source heat pump application in Yellowknife	2007	Ongoing
iv.	Feasibility Study of Con Mine External funding sources are being pursued	2007	2009

**6 – THE CITY LEAD BY EXAMPLE**

**d. Require all new City facilities to meet or exceed the requirements of the Commercial Buildings Incentive Program (CBIP), which requires the building to be at least 25% more efficient than the Model National Energy Code for Buildings (MNECB).<sup>3</sup>**

- I. Fully Implement
- II. Department Stakeholders – All
- III. Community Stakeholders – Architects and Engineers
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - There is no direct cost to implementing this policy.
  - b. Annual Financial Impact
    - In most cases, building to the CBIP standard will cost marginally more, but will reduce the life cycle cost of the building. The CEP report “The Life-cycle Cost Analysis - Energy Standards for New Buildings” shows that if new buildings in Yellowknife meet the CBIP standard for energy efficiency, the extra costs would be repaid in 2 to 4 years.
- VI. Background
  - a. The GNWT has adopted CBIP as a standard for all its new construction. As a result, local design firms have developed the capacity to design to CBIP and are comfortable working with the standard.
  - b. The Fieldhouse design process used the CBIP method and was able model a design that meet the required 25% improvement in energy efficiency.
- VII. Implementation Process
  - a. The City will use the criteria needed to comply with the CBIP standard such as the use of an integrated design team and will ensure the building is 25% better then the Model National Energy Code.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	The City will use the criteria required to comply with the CBIP standard when designing and buildings new facilities.	2006	Ongoing

**e. Implement into City fleet operations the following:**

**i. Purchase a demonstration fuel-efficient vehicle such as a Smartcar or Hybrid**

- I. Fully Implement Recommendation

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<sup>3</sup> The CBIP is a federal program that may not be renewed in 2007/08. The primary criteria for complying with the program is the use of an integrated design process and improving building efficiency to be 25% better then the Model National Energy Code.

## 6 – THE CITY LEAD BY EXAMPLE

- II. Department Stakeholders – Public Works & Engineering, Corporate Services, Public Safety
- III. Community Stakeholders – None
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - A Smartcar or Hybrid will cost between \$20,000 and \$40,000
  - b. Annual Financial Impact
    - The small size of a Smartcar will reduce operating costs compared to the larger vehicles being used by City Hall staff.
- VI. Background
  - a. The GNWT and residents are demonstrating and testing hybrid and Smart Cars in Yellowknife.
  - b. The City’s new tendering process which includes life cycle costing will ensure the most energy efficient vehicle that meets the tenders specifications will be purchased. It is expected that the new tendering process will eventually make hybrid vehicles a viable option for new vehicle purchases as the technology becomes more widely available and prices drop.
- VII. Implementation Process
  - a. The City will monitor the performance and reliability of the GNWT’s Smartcar and Hybrid in Yellowknife conditions.
  - b. If the GNWT’s Smartcar or Hybrid performs well the City will purchase one of the vehicles for demonstration purposes.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Monitor performance/reliability of GNWT’s Smartcar and Hybrid.	2007	2007
ii.	Purchase Smartcar or Hybrid for demonstration purposes.	2008	N/A

**ii. All vehicles purchased should be in the top 10% of efficiency for the lowest emission vehicle class available, which will meet operational requirements.**

- I. Fully Implement
- II. Department Stakeholders – Public Works & Engineering, Corporate Services
- III. Community Stakeholders – Vehicle Dealerships
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - There is no direct cost to implementing this policy.
  - b. Annual Financial Impact
    - New vehicles may cost marginally more but the life cycle cost of the vehicle will be considered.

## 6 – THE CITY LEAD BY EXAMPLE

### VI. Background

- a. The City has used the proposed tendering process in the purchase of heavy equipment in 2006.
- b. The life cycle cost of a vehicle can greatly vary and the largest expenditure of a vehicle over its life is the fuel consumed. Purchasing vehicles with the lowest life cycle cost will reduce energy use and emissions.

### VII. Implementation Process

- a. The City will purchase new vehicles with the lowest life cycle cost considered. Fuel efficiency will be a component of tendering process, ensuring the vehicle with the lowest life cycle cost will be selected. The selected vehicle must meet all requirements of the tender.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Include LCC in vehicle tendering process	2006	Ongoing

### iii. Fuel efficiency driver training program.

#### I. Fully Implement

- a. The CEP recommends a drivers training program similar to the program offered by the City of Edmonton. The City of Yellowknife does not have the same economies of scale as Edmonton and would not be able to implement a program as extensive as the Edmonton program. The City will provide a drivers training program but it will not be as comprehensive as the Edmonton program.

#### II. Department Stakeholders – Public Works & Engineering

#### III. Community Stakeholders – None

#### IV. End Result Focus – Internal City

#### V. Financial Impact

##### a. Cost to Implement

- The training materials for this program are offered by Natural Resources Canada and is free of charge. The cost to implement this program will be staff time.

##### b. Annual Financial Impact

- Improving driving habits of City staff will reduce the cost of purchased fuel and could lower vehicle maintenance expenses.

### VI. Background

- a. The NRCan drivers training program is entitled “SmartDriver in the City” and is focused on the light and medium duty fleet operations. This program is designed as a series of 15 minute 'tail-gate' type talks to be provided by the fleet manager.
- b. Records are kept of the fuel performance of all vehicles.

### VII. Implementation Process

**6 – THE CITY LEAD BY EXAMPLE**

- a. Provide the “SmartDriver in the City Training” package to fleet managers to provide to their crew.

VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Provide staff that drives regularly as part of their daily duties with driver training.	2007	Ongoing

**f. Require EnergyStar appliances/office products for all new purchases.**

- I. Fully Implement
- II. Department Stakeholders – Corporate Services
- III. Community Stakeholders – Local Suppliers
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - No increase in purchase price.
  - b. Annual Financial Impact
    - The operating savings from EnergyStar office equipment could be as high as 25% according to a BC Hydro study.
- VI. Background
  - a. The EnergyStar name is easily available from existing vendors.
  - b. The City has purchased EnergyStar office equipment in the past.
- VII. Implementation Process
  - a. The City will develop a purchasing policy to ensure that all new appliances and office equipment are EnergyStar approved.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Develop EnergyStar purchasing policy	2007	Ongoing

**g. Create an internal funding mechanism to fund renewable energy and energy efficiency projects that reduce greenhouse gas emissions.**

- I. Fully Implement
  - a. The CEP makes reference to setting up a revolving fund that would use the savings from energy efficiency projects to finance future projects. The City intends to set aside \$365,000 annually from the Gas Tax agreement for internal energy efficiency projects but does not intend to make this fund revolving. A revolving fund is not recommended because project funding comes from an external source (Gas Tax) and would require funds from the operating budget to be set aside to replenish the revolving fund. This process would put additional strain on an already tight operating budget as well as is a time consuming and complicated process.

## 6 – THE CITY LEAD BY EXAMPLE

- II. Department Stakeholders – Corporate Services
- III. Community Stakeholders – None
- IV. End Result Focus – Internal City
- V. Financial Impact
  - a. Cost to Implement
    - A \$365,000 Energy Efficient fund has been set up to finance internal to the City projects. This fund is part of a \$500,000 CEP budget allocation from the City’s Gas Tax agreement.
  - b. Annual Financial Impact
    - This funding is expected to reduce City operating expenditures on energy by 10 percent by the 2014 target year. In 2005 dollars this is equivalent to approximately \$319,000 annually.
- VI. Implementation Process
  - a. Establish a Community Energy Plan Reserve by amending the Financial Administration By-law #4206.
  - b. A minimum annual budget allocation of \$500,000 will be transferred to CEP Reserve annually for the life of the Gas Tax agreement. A minimum allocation for energy efficiency projects will be \$365,000 annually.
  - c. Define the spending parameters of the Energy Management Fund.
  - d. The City will extend the annual contribution to the Community Energy Plan Reserve provided the Gas Tax agreement is extended beyond 2010.
- VII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Establish a Community Energy Plan reserve	2007	2007
ii.	Transfer \$365,000 annually to reserve	2007	2010
iii.	Define spending parameters of fund	2006	2007
iv	Extend annual contribution to fund past 2010 if Gas Tax agreement is extended.	2010	Ongoing

## **7 – ENERGY EFFICIENT BUILDING STANDARDS**

### **RECOMMENDATION 7 – ENERGY EFFICIENT BUILDING STANDARDS**

#### **7. Adopt energy efficient building standards and incorporate into the City’s building by-law:**

The 2004 Energy Baseline report showed that the largest source of greenhouse gas emissions and energy costs were related to heating buildings and homes. In order to reduce emissions new homes and buildings should be constructed to a standard that maximizes energy efficiency while at the same time remaining economical to construct.

The EGH-80 and CBIP standards were chosen because they maximized energy efficiency while remaining economical. The Life-cycle Cost Analysis - Energy Standards for New Buildings report found in the CEP that building to the EGH-80 and CBIP standards would increase costs but the energy savings would have a payback of 2 to 8 years.

It is recognized that developers are not always motivated to consider the life cycle costs of a building/home. Energy efficient building standards will ensure the interests of the end user is considered.

EGH-80, CBIP & ENERGY STAR were chosen as standards to work towards because they are not overly “prescriptive”, leaving room for builders to choose how they want to meet the requirements.

The GNWT is the largest developer in the NWT and has adopted the CBIP standard for all its new commercial and industrial construction. Local design teams are capable of using the CBIP design process.

#### **a. Consult public on how to implement EGH-80 as a standard for new residential construction.**

##### Implementation Process:

The City is in the process of developing an implementation process for residential building standards. The first phase of the implementation process will be to consult the public. A more detailed implementation process is being developed by the Planning and Development Department and will be presented to Council in March.

#### **b. Consult public on how to implement the CBIP design process as a standard for new commercial construction.**

##### Implementation Process:

The Planning & Development Department is developing an implementation process for the implementation of a commercial building standard. A detailed process will be included in the development of the Smart Growth Redevelopment Plan.

## **7 – ENERGY EFFICIENT BUILDING STANDARDS**

### **c. Consult public on how to use EnergyStar as a standard for appliances in all new construction.**

#### Implementation Process:

The City is in the process of developing an implementation process for residential building standards. This recommendation will be implemented in the same process as the residential building standards, Recommendation 7a.

## 8 – TRANSPORTATION

### RECOMMENDATION 8 – TRANSPORTATION

#### 8. Lead by example on energy and climate change

The second largest contributor to greenhouse gas emissions in the City is the transportation sector. Yellowknife is a compact city making it a relatively good walkable community. The City can influence community emissions by ensuring the trail system continues to be supported.

Yellowknife's public transit system currently does not carry enough riders to significantly offset the greenhouse gases it produces. Alterations to the current service need to be made to ensure the system continues to contribute to reducing the communities emissions.

#### a. Follow the implementation schedule passed by Council contained in the 2005 Integrated Parks, Trails & Open Spaces Study.

- I. Alternative Action to CEP Recommendation
  - a. The CEP recommends accelerating the implementation of the Integrated Parks, Trails & Open Spaces Study (Trail Study).
- II. Department Stakeholders – Community Services
- III. Community Stakeholders – General Public
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - The City has been including the cost to implement the Trail Study in its annual budgeting process. No additional costs are associated with implementing this recommendation.
  - b. Annual Financial Impact
    - The City expects the budget for maintaining the parks and trail system will increase with the expansion of the system.
- VI. Background
  - a. The Trail Study recommends pedestrian highway crossing. The City received \$28,000 in 2006 to contribute to the implementation of this action.
- VII. Implementation Process
  - a. The City will continue to follow the implementation schedule passed by Council for the Trail Study. The study will be implemented in the spirit of the original document but may be altered to adapt to financial constraints.
  - b. The Planning & Development Department will incorporate trail development and preservation into future developments and the Smart Growth Redevelopment Plan.
- VIII. Implementation Timeline

## 8 – TRANSPORTATION

	Implementation Points	Start Date	Finish Date
i.	Follow the Trails Study implementation process as passed by Council.	Ongoing	2015
ii.	Smart Growth Redevelopment Plan will integrate trail development and preservation into future developments.	Ongoing	Ongoing

### b. Encourage hybrid taxis.

- I. Alternative Action to CEP Recommendation
  - a. The CEP recommends encouraging hybrid taxis and shared taxis. The bylaws governing the taxi companies does not restrict individuals from sharing a taxi but the City does not recommend being involved in the encouragement of the activity because of the difficulty in setting a formal pricing system and liability issues.
- II. Department Stakeholders – Public Safety
- III. Community Stakeholders – Taxi Companies, General Public
- IV. End Result Focus – Community
- V. Financial Impact on City
  - a. Cost to Implement
    - There is no direct cost to implementing this recommendation
  - b. Annual Financial Impact
    - There is no long term financial impact to the City
- VI. Background
  - a. The operating life of a taxi is restricted to nine years by By-Law 3653.
  - b. A hybrid taxi was registered at the City in early 2007. It is the first hybrid taxi in the city.
- VII. Implementation Process
  - a. Promote the improved profitability and cold weather reliability of hybrid vehicles to taxi owners.
  - b. Amend By-Law 3653 to extend the operating life of a hybrid taxi from nine to ten years. Inform taxi companies.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Promote the benefits of hybrids to taxi companies	2007	Ongoing
ii.	Extend hybrid taxi operating life by one year	2007	2007

### c. Support public transit while continuing to explore opportunities to increase efficiency and effectiveness.

- I. Fully Implement Recommendation

## 8 – TRANSPORTATION

- II. Department Stakeholders – Public Works & Engineering
- III. Community Stakeholders – Transit Contractor, General Public
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - The City has budgeted \$40,000 in 2007 to implement the recommendations found in transit Marketing Study. This funding will be used to redesign the system attempting to improve ridership.
  - b. Annual Financial Impact
    - If the City can increase the ridership of the bus service the increased participation has the potential of lowering the City’s subsidized portion of the service through the collection of fee for services.
- VI. Background
  - a. Transit rider-ship has increased by 17 percentage between 2004 and 2005 and is projected to increase by an additional 7 percent in 2006. Total rider-ship for 2007 is projected to be 175,000.
    - The City has received the results of a transit marketing study in early 2007. The primary recommendation in the study suggests a route evaluation.
  - b. \$40,000 has been approved in the 2007 budget to implement the recommendations in the Marketing Study.
  - c. The City’s contract with the transit provider is up for renewal in August 2007.
- VII. Implementation Process
  - a. Re-tender the transit contract and implement recommendations in the Transit Marketing Study.
  - b. Work to improve the efficiency of the transit system by hiring a professional transit consultant to do a route evaluation, with the objective of increasing rider-ship.
  - c. Review and implement appropriate recommendations from the transit consultant.
  - d. The Smart Growth Redevelopment Plan acknowledges that increasing ridership through land use and urban design as a long-term objective, but one that can have measurable impacts over time. Based on this objective, the Plan will identify existing and potential mixed high density districts which can be more supportive of a public transit system. In doing so, it is envisioned that overtime these origin and destination nodes will serve to strengthen transit and decrease automotive dependency.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Complete transit marketing study	2007	2007
ii.	Develop Workplan based on transit marketing	2007	2007

## 8 – TRANSPORTATION

	study which would include: Route Evaluation Revising Schedule		
iii.	Apply to the Public Transit Fund under the new deal for Cities and Communities	2007	2007
iv.	Tender Transit System Services	2007	2007
v.	Ensure future developments give consideration to transit issues through the Smart Growth Redevelopment Plan	2007	Ongoing

### **d. Make the City’s fuel efficiency driver training program available to the public after it is established.**

#### Not Recommended

The City will use NRCan’s Fleet Smart Driver Training program (Recommendation 6e) to train its fleet operators fuel efficient driving habits. There is no evidence for market demand for a drivers training program; this recommendation would require the City to develop the training capacity to offer a course with no guarantee of public uptake. The Department of Transportation offers driver training and would be better suited to offering training in the area of energy efficiency. As an alternative to the City offering an in-house drivers training program it will encourage the Department of Transportation to incorporate energy efficient drivers training into its existing course.

	Implementation Points	Start Date	Finish Date
i.	Not recommended that the City offer a public drivers training course.	N/A	N/A
ii.	The City will encourage Dep. of Transportation to incorporate efficient driving habits into existing driver training program.	2007	N/A

### **e. Implement specific measures to make cycling and walking easier such as the creation of bike lanes and improved maintenance of sidewalks and walking trails.**

- I. Fully Implement Recommendation
- II. Department Stakeholders – Public Works & Engineering
- III. Community Stakeholders – Ecology North, Cyclists
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - The City has made supporting active transportation a priority and has budgeted for pedestrian friendly infrastructure. The implementation of this recommendation may have significant costs but will be considered in future budgets.

## 8 – TRANSPORTATION

- b. Annual Financial Impact
  - As the City invests in more pedestrian friendly infrastructure maintenance costs will increase.

### VI. Background

- a. The City has adopted the recommendations found in the Integrated Parks, Trails and Open Space Development Study in 2005, which encourages a non-vehicular commuter system.
- b. In an attempt to improve and encourage walking and cycling the City has been widening and expanding the sidewalk and cycling lanes throughout the city. Refer to Appendix B entitled “New and Planned Sidewalks and Pedestrian Friendly Streets”.

### VII. Implementation Process

- a. Continue to implement the recommendation in the “Non-vehicular Commuter System” section of the “Integrated Parks, Trails and Open Space Development Study”.
- b. Work with Ecology North’s Transportation Issues Committee to identify common commuter routes and barriers to convenient cycling.
- c. The Smart Growth Plan will aim to facilitate convenient active transportation methods by improving streetscapes and ensuring new developments connect to the existing trail system.
- d. Continue pedestrian friendly infrastructure upgrades.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Implement Integrated Parks, Trails and Open Space Development Study	2005	2015
ii.	Work with Ecology North’s Transportation Issues Committee on improving cycling routes	2007	2007
iii.	Incorporate pedestrianism into Smart Growth Redevelopment Plan	2007	2009
iv.	Continue pedestrian friendly infrastructure upgrades	Ongoing	

### f. Investigate ways of strengthening the Yellowknife anti-idling by-law.

- I. Fully Implement Recommendation
- II. Department Stakeholders – Public Safety
- III. Community Stakeholders – All Motorist
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - Investigating how to strengthen the by-law will have little cost other than City staff time.
  - b. Annual Financial Impact

## 8 – TRANSPORTATION

- The enforcement of an anti-idling bylaw will require additional staff time for the Municipal Enforcement division.

### VI. Background

- a. The City has an anti-idling bylaw that is enforced with limited success because it requires excessive commitment from the Municipal Enforcement Division.

### VII. Implementation Process

- a. The City will investigate changes to the by-law to make it easier to enforce.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	The City will investigate ways to strengthen anti-idling bylaw.	2008	2008

## 9 – “LOBBY”

### RECOMMENDATION 9 – “LOBBY”

#### 9. Promote action from other orders of government.

The City’s jurisdiction is limited when considering ways to reduce community emissions. However, the City does have influence with the territorial and federal governments.

#### a. Work with the GNWT to create a green financing mechanism for residents and businesses.

- I. Fully Implement
- II. Department Stakeholders – Public Works & Engineering– Energy Coordinator
- III. Community Stakeholders – GNWT’s Department of Industry Tourism and Investment
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - There is no direct cost of lobbying the government.
  - b. Annual Financial Impact
    - There is no direct annual cost of lobbying the government.
- VI. Background
  - a. The GNWT’s Department of Industry Tourism and Investment (ITI) has commissioned a consultant to develop the framework for a green financing program for the NWT.
- VII. Implementation Process
  - a. The City has been working with ITI and their consultant to develop a framework that best meets the needs of the Yellowknife population.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Support ITI (GNWT) in their effort to develop a green financing program.	2006	2007

#### b. Lobby GNWT to make bio-fuels available in the NWT as they become available in the Canadian market place.

- I. Fully Implement
- II. Department Stakeholders – Public Works & Engineering – Energy Coordinator
- III. Community Stakeholders – GNWT Department of Environment and Natural Resources.
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - There is no direct cost of lobbying the government.

## 9 – “LOBBY”

### b. Annual Financial Impact

- There is no direct annual cost of lobbying the government.

### VI. Background

- a. Transportation fuels with ethanol or bio-diesel content are becoming available in Canada, but are not available in Yellowknife.

### VII. Implementation Process

- a. Monitor the availability and production practices of bio-fuels. When availability then the City will work with the GNWT to make bio-fuels available in Yellowknife.

### VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Monitor the availability of bio-fuels.	2007	Ongoing

### **c. Support other governments, such as Health Canada and GNWT Health and Social Services, in promotion of daily exercise such as walking.**

#### I. Fully Implement

#### II. Department Stakeholders – Public Works & Engineering – Energy Coordinator

#### III. Community Stakeholders – Public, Health Canada and NWT Health and Social Services.

#### IV. End Result Focus – Community

#### V. Financial Impact

##### a. Cost to Implement

- There is no direct cost to the City.

##### b. Annual Financial Impact

- There is no direct annual financial impact on the City.

### VI. Implementation Process

- a. The City will encourage its residence to live an active life style and is interested in partnering with groups working in this area such is Health Canada, NWT Health and Social Services and Ecology North.

### VII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Support other governments in the promotion of exercise such as walking.	2008	Ongoing

## 10 – “PARTNER”

### RECOMMENDATION 10 – “PARTNER”

#### 10. Form local and regional energy partnerships

Since the two gold mines shut-down, over 95% of Yellowknife’s electricity comes from hydro dams. The NWT Power Corporation is planning to build more hydro capacity, but only when there is sufficient demand to justify the hydro expansion costs. The proposed remediation process at Giant Mine is expected to significantly increase the demand for power in the short term, which will increase Yellowknife’s reliance on diesel generated power if the hydro system is not expanded.

The Renewable Energy in Yellowknife for Homes and Buildings report identifies that if a special rate could be negotiated for electric or ground-source heat pump heating of buildings, it could create the necessary increase in power demand required to support building a new hydro generating station ahead of the current plans. This would avoid the need to use the Jackfish diesel power plant.

There are a number of northern businesses, including the diamond mines who have won awards for their energy management programs. Including these businesses in the CEP process will allow the City and community to gain valuable insight into energy reduction practices.

#### **a. Partner with local utilities and building owners (including other levels of government) to facilitate an early start to construction of a new hydroelectric station on the Snare system so that hydro-electricity can be used to replace fossil fuels.**

- I. Fully Implement
- II. Department Stakeholders – Public Works & Engineering
- III. Community Stakeholders - Energy Corporation
- IV. End Result Focus – Community
- V. Financial Impact
  - a. Cost to Implement
    - There is no direct cost of lobbying the government.
  - b. Annual Financial Impact
    - There is no direct annual cost of lobbying the government.
- VI. Background
  - a. The Town of Fort Smith has worked with the NWT Power Corporation to study using power from the Taltson hydro system for space heating purposes.
- VII. Implementation Process
  - a. The City will express interest to the NWT Power Corporation of its interest in having an early start to the expansion of the hydro system.
- VIII. Implementation Timeline

**10 – “PARTNER”**

	Implementation Points	Start Date	Finish Date
i.	Express interest to the NWT Power Corporation	2007	N/A

**b. Partner with local businesses, including northern mines, to draw on their expertise in energy management.**

- I. Fully Implement
- II. Department Stakeholders – Public Works & Engineering
- III. Community Stakeholders - Local Mining Company
- IV. End Result Focus – Community/Internal City
- V. Financial Impact
  - a. Cost to Implement
    - There is no cost to including mines in CEP process.
  - b. Annual Financial Impact
    - There is no cost to including mines in CEP process.
- VI. Background
  - a. The local diamond mines have implemented successful energy management plans in their operations.
- VII. Implementation Process
  - a. Contact mining companies to be involved with the CEP Implementation Committee.
- VIII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Contact mining companies to be involved with the CEP Implementation Committee	2007	N/A

## 11 - INFORM

### RECOMMENDATION 11 - INFORM

#### 11. Inform the public about Yellowknife's Community Energy Plan and share the success stories and innovative actions that the City is taking.

- I. Fully Implement
- II. Department Stakeholders – All
- III. Community Stakeholders - All
- IV. End Result Focus – Internal & External City
- V. Financial Impact
  - a. Cost to Implement
    - \$25,000 has been allocated in the 2007-09 CEP budget for the communications of the CEP.
  - b. Annual Financial Impact
    - The communications plan, if successful, will contribute to reducing energy related expenditures within City operations.
- VI. Implementation Process
  - a. A communications plan was developed for the CEP by Outcrop Communications. The City will update the work plan in this document to make it relevant for the 2007 year. The Communications report is found in the CEP binder.
- VII. Implementation Timeline

	Implementation Points	Start Date	Finish Date
i.	Develop an updated work plan using the communications plan developed for the CEP	March 2007	
ii.	Implement work plan	Spring 2007	Ongoing
iii.	Annual Progress Report	2008	Ongoing

## **RECOMMENDATION 12 – GREEN FINANCING FOR HOMEOWNERS**

**12. Pilot a green financing program for City home owners that focuses on reducing the use of fossil fuels for home heating.**

Not Recommended

The Cities, Towns and Villages Act of the NWT restricts the City from lending money or providing loan guarantees to the public. It is not recommended that the City be directly involved in a green financing program. It will however, support the GNWT in their effort to design and implement a program. See Recommendation 9a.

## City Efforts to Improve Energy Performance

City of Yellowknife  
(March 2007)

<b>Pumphouse, Lift Station, Garage and Roadways</b>
<ol style="list-style-type: none"><li>1. Monitor temperature and provide constant heat injection to City water supply in winter to reducing boiler demand and wear on pipe network. Estimated fuel savings \$120,000, Completed 2004.</li><li>2. Installed variable frequency drives lowering demand charges.</li><li>3. Developed a green procurement practice for pump replacement and electric motors.</li><li>4. Air release valves installed on forcemain to improve sewer pumping efficiency.</li><li>5. Air exchanger installed in City garage offices.</li><li>6. Reduce temperature in parking garage from 17 to 5C. Estimated fuel savings \$5,000/year.</li><li>7. LED Traffic Lights – 6 of 18 intersections converted. The remainder of the intersections to be completed in 2007.</li><li>8. Parking lot plug-in controls installed at City Garage – Cost - \$6,000, Project payback - 6 months, External funding secured - \$3,000, Completed 2006.</li><li>9. Pipes insulated to reduce heat loss at City Garage – Cost - \$13,500, Project payback – 3.1 years, external funding secured – \$6,750, Completed 2006.</li><li>10. Lighting Retrofit of all facilities – Cost - \$28,000, Project payback – 2.3 years, external funding secured – \$14,000, Completed 2006.</li></ol>
<b>Baling Facility</b>
<ol style="list-style-type: none"><li>1. Installed a carbon monoxide detection in the bay area to exhaust vehicle fumes allowing the overhead doors to remain closed in winter. This has enabled the facility to shut off the in-floor heating system saving significant amounts of energy.</li></ol>
<b>Transit</b>
<ol style="list-style-type: none"><li>1. Transit Marketing Study was commissioned to develop ways to increase ridership. Results of the study were received in early 2007.</li></ol>
<b>Walking/Bike Trails</b>
<p>The City has been making the community more pedestrian friendly by adding sidewalks, increasing sidewalk widths, paving trails and creating an interconnected trail system.</p> <ol style="list-style-type: none"><li>1. New paved sidewalks have been added:<ul style="list-style-type: none"><li>- From Hospital to Canadian Tire.</li></ul></li></ol>

- Along School Draw Ave. and continuing on Franklin Ave. to McDonald Dr.
  - Wiley Road
  - Rycon Dr
  - Forrest Dr. North
  - Finlayson Dr. (Calder to Range Lake Road)
  - Bigelow Cr.
2. Frame Lake Trail paved from Matonabee to Dakota Court.
  3. Connected Niven Phase IV to trail system.
  4. A number of downtown sidewalks have been enlarged to facilitate the ease of pedestrian traffic.
  5. A number of new sidewalks are planned as part of road reconstruction, including connecting the sidewalk from Canadian Tire to Highway 3.

**Ruth Inch Memorial Pool**

1. Infrared shower controls were installed to automatically shut off water.
2. Tests to determine optimum lighting levels were conducted resulting in a decrease in the number of lights required.
3. Lighting retrofit to be completed, enabling lights to be turned off during inactive periods during the day.

**YK Arena and Curling Club**

1. Add a timer to the ventilation system to ensure it only runs during operating hours.
2. Added a low emicity ceiling to reduce heat loss - External funding secured - \$30K
3. Tests to determine optimum lighting levels were conducted resulting in a decrease in the number of lights required.
4. Completed a major facility wide lighting retrofit, upgrading over 180 lights.
5. Installed low flow shower heads reducing hot water requirements.
6. Resized the motors in the air-handling unit to improve operational efficiency.
7. Painted bleacher area with light reflecting paint eliminating the need for additional lighting.

**Wildcat Café**

1. Upgraded the furnace to a high efficiency system.

**City Hall**

1. Replaced 3<sup>rd</sup> floor uninsulated exterior doors with insulated alternatives reducing heat loss.
2. Insulated the pipes in the mechanical room to reduce heat loss.

<b>Multiplex</b>
<ol style="list-style-type: none"> <li>1. Designed with energy efficiency as a primary consideration.</li> <li>2. Heat curtain was added in the front entrance to reduce heat loss.</li> </ol>
<b>Planning and Lands</b>
<ol style="list-style-type: none"> <li>1. FCM application submitted for Smart Growth Plan (SGP). The SGP will focus on good urban design that encourages pedestrian activities, increase density and supports energy efficiency building practices.</li> </ol>
<b>Energy Coordinator Position</b>
<ol style="list-style-type: none"> <li>1. Secured \$110,000 upon completion of the CEP from the Federation of Canadian Municipalities (FCM)</li> <li>2. Coordinated with Directors to develop an implementation strategy for the CEP.</li> <li>3. Made presentations on the CEP to: <ul style="list-style-type: none"> <li>- a Committee of MLA's</li> <li>- the MACA Conference on Community Energy Planning in the North</li> <li>- the International Association for Impact Assessment</li> </ul> </li> <li>4. Made a funding request to FCM to support a feasibility study of the heating potential in Con Mine.</li> <li>5. Working with an external consultant to develop an adaptation to climate change strategy for the City.</li> <li>6. Represented the City at: <ul style="list-style-type: none"> <li>- National Round Table on Energy and the Environment – local consultation</li> <li>- Climate Change Science Seminar</li> <li>- MACA Conference on Community Energy Planning in the North</li> <li>- NWT Climate Change Leadership Summit – Ecology North</li> </ul> </li> <li>7. Help City of Yellowknife Manager's identify sources of external funding for energy management projects securing \$45,000 in 2006.</li> </ol>