

# ENERGY MANAGEMENT AND GREEN BUILDING



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OEMC 2008

## Outline



- § Strategic context for energy management.
- § The Energy Management Plan
- § Linkage to Green Building Results

# Strategic Context for Energy Management



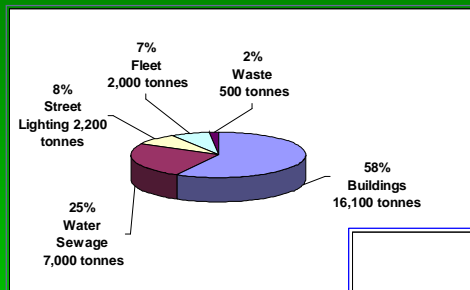
## Support for Action on Climate Change

- § 2001 FCM-PCP Membership
- § 2001 support for the Kyoto Protocol
- § 2003 energy baseline completed
- § 2004 Council endorsed GHG reduction targets of:
  - § 10% for the community and 25% for the corporation by 2014.

## Corporate Cost Control Objective

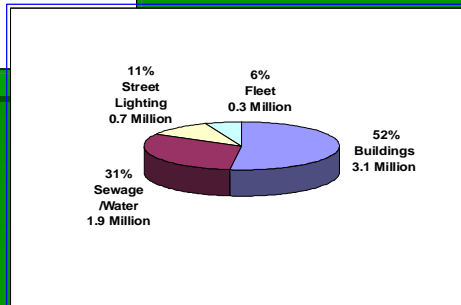
- § CMT challenged all departments to find sustainable ways to reduce annual operating costs by approx \$2M per year.

# Strategic Context for Energy Management



Total GHG emissions in 2000 = 28,000 tonnes eCO<sub>2</sub>

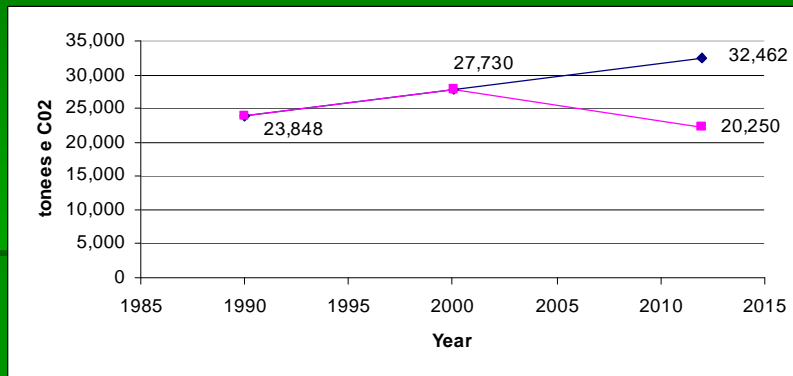
Total energy cost in 2000 = \$6.1 million



# Strategic Context for Energy Management



What Will It Take to Meet Our 25% Reduction Commitment?



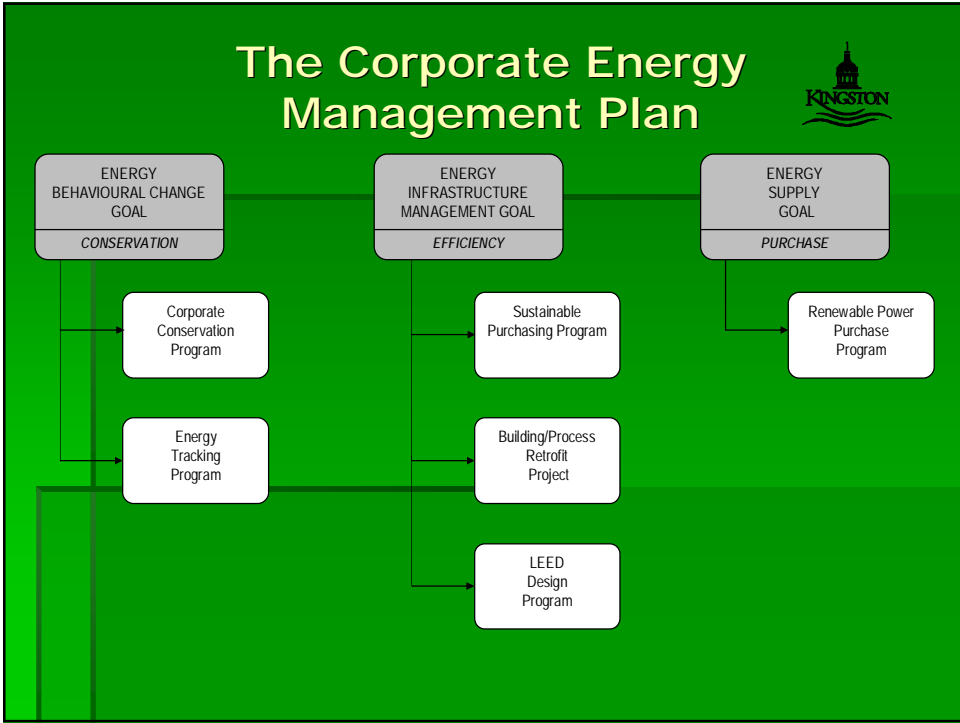
# Corporate Buy-In



Kingston's Corporate Management Team (CMT) received and accepted the Energy Management Plan as internal policy in December 2006.

The Plan was presented to all directors of the City of Kingston in December 2006, and

The Plan was presented to the Environment, Infrastructure and Transportation Policies (EITP) Committee in January of 2007.



- ## Kingston's Corporate Energy Management Plan
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- § Priority #1: Review Facility Infrastructure Management
  - § Priority #2: Optimize Infrastructure for Energy Efficiency
  - § Priority #3: Develop a Culture of Energy Conservation
  - § Priority #4: Improve Energy Data Management
  - § Priority #5: Incorporate Renewable Energy into Energy Mix

## Strategic Priority #1 - Review and Optimize Facility Infrastructure Management

Desired State: Consideration is given, where appropriate, to the potential synergies that could be realized through centralization of facility infrastructure management within the organization. If the current semi-decentralized approach to facility infrastructure management is retained, formal and informal networks are in place to allow for the benefits of knowledge sharing, best practice transfer and economies of scale (products and services) purchasing practices to be realized.

Current State: Goal has largely been achieved with the creation of the Assets Management Group within Corporate Services. This group has responsibility for the majority of buildings.



## Strategic Priority #2 - Optimize Municipal Infrastructure for Energy Efficiency

Desired State:

1. Energy efficiency for buildings is achieved through retrofitting of existing systems, design and construction of new buildings to high energy efficiency standards and purchase of goods and services with consideration of their embedded energy and energy efficiency.
2. Energy use in existing buildings is decreased by 10 to 20%.
3. Energy use in new buildings is minimized.

Current State:

1. Energy retrofit program underway. Draft detailed engineering study just completed by MCW Inc.
2. LEED™ for new buildings policy passed by Council in 2004.
3. One LEED™ building project completed (Police HQ)
4. Three LEED™ building projects underway (KRSEC, Multiplex, Ravensview)
5. Sustainable procurement policy is under development.



## Strategic Priority #3 - Develop a Culture of Energy Conservation

### Desired State:

1. Energy use is decreased by 10% due to an effective conservation program.
2. City employees are aware of their energy use and are empowered by their ability to realize their ideas for process and behavioral changes that result in energy conservation and cost savings.
3. Recognition is provided to individuals and groups within the organization that demonstrate a culture of conservation.
4. The change strategy to incorporate conservation into the culture of the organization complements the transition from a hierarchical to a team-based organization.

Current State: Planned for 2009.



## Strategic Priority #4 - Optimize Energy Data Management

Desired State: Building energy consumption is tracked and monitored. Building managers are aware of the costs of energy and understand the opportunities to reduce energy consumption and costs. An efficient system is in place to provide timely energy consumption and cost data to building managers so that they are empowered to take positive action.

Current State: Accounting practices have been improved to allow for easier compilation of energy costs and consumption.

### Actions:

1. Standardize BAS in new and retrofitted facilities to allow for real time energy performance tracking by the Assets Management Group.
2. Compile and issue quarterly energy performance reports.
3. Evaluate feasibility of compliance with ISO 14064.



## Strategic Priority #5 - Incorporate Renewable Energy into the Energy Mix

Current State: Very little renewable or alternative energy within our energy mix. Energy (natural gas, electric, petroleum fuels) is purchased through conventional distributors.

Desired State: 10% of energy mix comprised of renewable or alternative sources.

### Actions:

1. Require energy retrofit project to evaluate the incorporation of renewables where feasible.
2. Purchase 5% of electrical demand from certified renewable sources.
3. Support UK in Ravensview Cogeneration plans.
4. Switch Transit fleet to Biodiesel.



## What's Next?



- § Complete the retrofit program
- § Implement a conservation program
- § Implement the Green Fleet Policy
- § Monitor the electricity purchasing program
- § Begin annual reporting out of energy performance and GHG emissions.

