Energy Management

Presentation to

Housing York Inc. Board

(refer to item E.3)

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York Region

Purpose

1. **Background:**
    1. 2017 to 2020 HYI Plan

2. **Overview of Previous Energy Initiatives and Results**
    1. Energy Management Retrofit Program 2008 to 2012
    2. Measurement and Verification (Actual vs. Estimates and GHG Emission reduction)
    3. Engagement

3. **Developing a New Energy and Utilities Management Plan**
    1. Baseline
    2. Progressive
    3. Aggressive

4. **Future Energy Initiatives**
    1. Funding Opportunities
    2. Recommendations

Background

Support the long term objectives identified in the "*Achieving New Heights Through Innovation and Sustainability*" Housing York Inc.'s 2017 to 2020 Plan

Strengthen community health

Build long-term Financial sustainability

Provide good governance and strengthen organizational capacity

Inform and implement Regional housing initiatives

Effectively manage assets

Effectively manage assets

Objective: Residents enjoy well-maintained and sustainable buildings that optimize expected building life cycles and costs.

Actions	2017	2018	2019	2020
• Measure the effectiveness of previous energy initiatives, promote successes and seek Board input on future energy management initiatives	●			
• Create an energy management plan that will guide future energy initiatives		●		

Energy Management Retrofit Program

2008-2012

HOUSING YORK INC.
Building Strong Communities

communities by municipality

- Highrise 5
- Lowrise 15
- Townhouse 5
- New Developments 2

Circles represent the locations retrofit projects

Utility Cost Savings – Measurement and Verification

Total Cost ($)	Funding Source ($)				Total Number of Energy Retrofit Projects
	Provincial Grant through SHRRP	Third Party Incentives	Annual Capital Program	Energy Loan from the Region	
2,727,445	**1,071,882**	**245,075**	**610,488**	**800,000**	**107**

25 properties

M&V	Natural Gas ($)	Water ($)	Electricity ($)	Total ($)	Annual GHG Reduction	Retrofit Cost ($)
Estimate	44,184	15,275	101,843	**161,302**	**285 Tonnes**	2.3 million
Actual	57,903	27,985	57,498	**143,386**	**266 Tonnes**	2.19 million
Variance	13,719	12,710	-44,345	**-17,917**	**-19 Tonnes**	-0.11

18 properties

Completed Natural Gas Projects

- High efficiency mechanical equipment
  (boilers, hot water tank heaters)
- Variable flow makeup air unit
- Building Automation Systems
- Solarwall
- Solar water heating system

Annual GHG reduction is 242 Tonnes

Equivalent to:
The carbon sequestered by 227 acres of forest

Verified natural gas savings:
Annual savings
of $57,903

Equivalent to heating and providing hot water for

55

homes

annually

Completed Water Projects

- Water efficient toilet
- Low flow shower head
- Aerator

Low flow shower

Verified water savings:
Annual savings of $27,985

Equivalent to filling
4 Olympic sized swimming pools

Completed Electricity Projects

- Lighting retrofit
- Fan motor control
- Building Automation Systems

Annual GHG reduction is 24 Tonnes

Equivalent to: the carbon sequestered by 23 acres of forest

Energy Initiatives Since 2013

Energy Initiatives:

- LED lighting for 5 parking lot projects
- Central heating control pilot project
- Condensing boilers
- Variable speed drives (motors)

New Development:

- HYI designs its' new construction at minimum 30% more efficient than Ontario Building code requirements
  - Lakeside Residences
  - Richmond Hill Hub

Woodbridge Redevelopment qualified for $120,000 incentive from Enbridge Gas

Engagement

(HSC) Community Champions Program:

- Workshop held at three properties
  - Pineview Terrace (Georgina)
  - Oxford Village (East Gwillimbury)
  - Orchard Heights (Aurora)

Lessons learned:

- More resident engagement
- Select technology that reduce energy consumption and maintain resident comfort
- More communication (before, during and after projects completion)

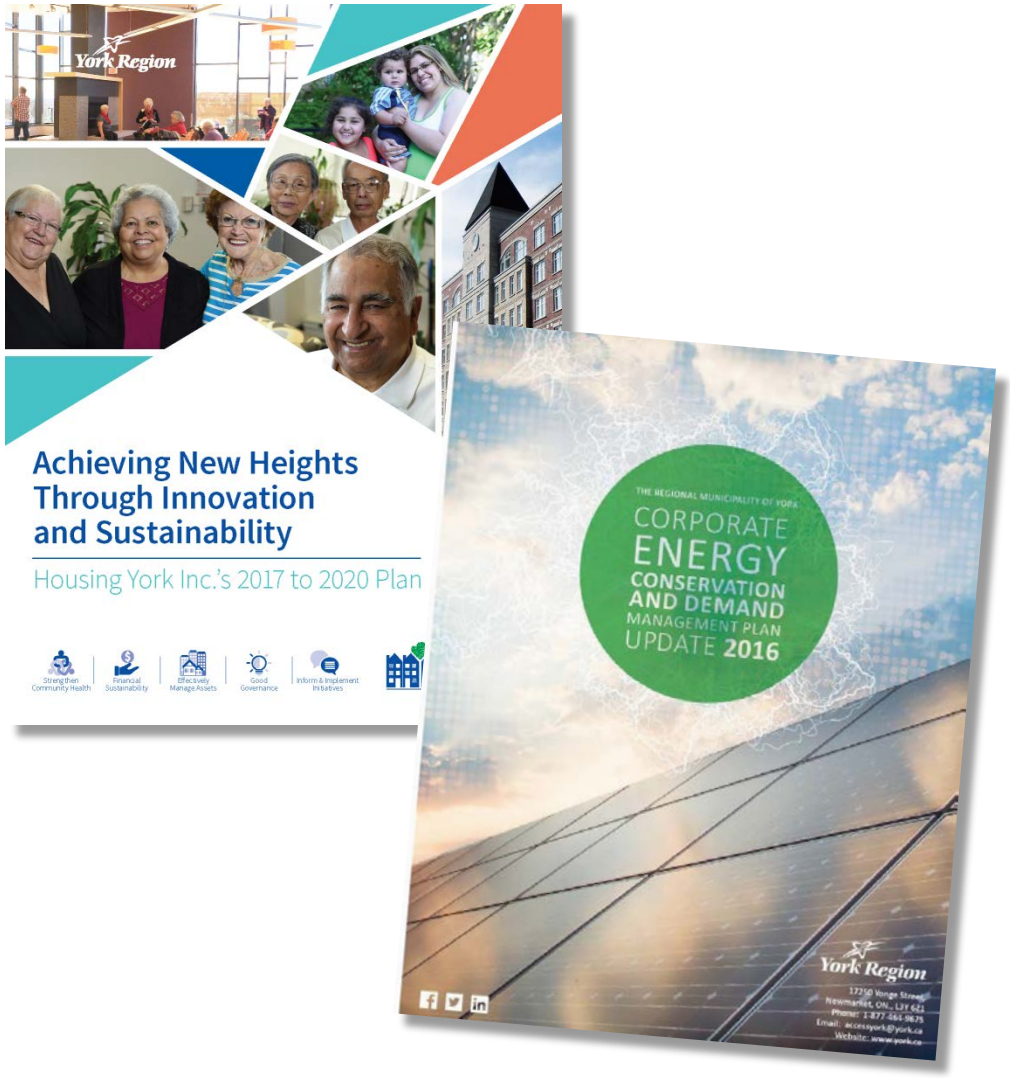
Engaged residents:

- Behavioural based Education session on energy saving
- Show case the energy performance of the building
- Identify in-suite technologies that can be used to save energy (power bar)

Developing a New Energy and Utilities Management Plan

Develop an Energy Management Plan (2018) to address:

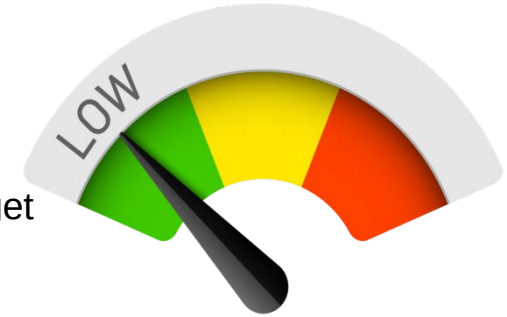
- Mitigate rising utility costs
- Reduce greenhouse gas emissions
- Reduce operational expenditures
- Maintain resident comfort



Developing a New Energy and Utilities Management Plan

Baseline Approach:

- Evaluate high efficiency equipment at the end of component life
- Energy education to drive behaviour change
- Cost associated with the upgrades is captured in annual capital budget
- This is the current practice



Progressive Approach:

- Include baseline level approach
- Upgrades of building components before end of component life
- Implementation of new energy control systems
- Cost recovery of eight years or less

Aggressive Approach:

- Include baseline and progressive
- Leading edge energy technologies and upgrades
- Cost recovery longer than eight years
- Deep energy retrofits
- Renewable energy

The Progressive Approach is recommended, moving towards an aggressive approach as Federal and Provincial funding is available

Future Energy Initiatives

Funding Opportunities:

- Federal and Provincial Programs
- Third party incentive programs
- Capital budget

Partners:

- Federal and Provincial Government, Regional and Local Government, Utility company and Enbridge

Future Energy Initiatives

Recommendations:

1. The Board of Directors direct staff to develop an Energy Management Plan based on the following principles:

   a) Upgrade with high energy efficiency components at end of component life

   b) Continue and expand energy education and awareness initiatives with residents

   c) Upgrade with high energy efficiency components before end of component life if cost recovery is eight years or less

   d) Pursue aggressive approach initiatives when Provincial and Federal funding is available to pay for the initiatives

2. The Energy and Utilities Management Plan be brought to the Board of Directors for approval in Q3 2018

Thank you