

Agenda #7.1
Public Works Committee
May 16, 2013



Hamilton
Public Works

**Public Works
Corporate Assets and Strategic Planning**

2012 Annual Energy Report

May 16, 2013

Providing services that bring our City to life !

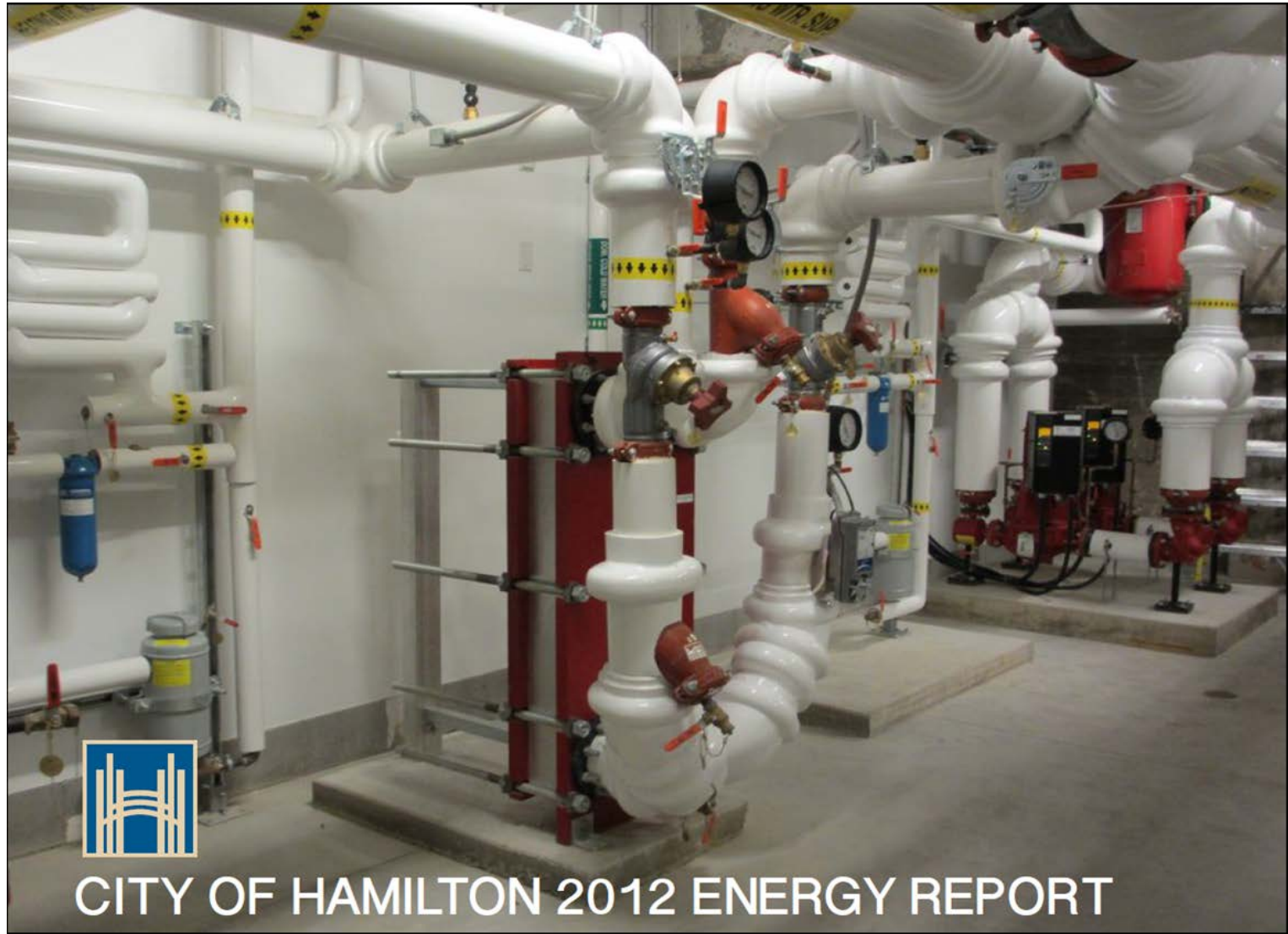
- Community
- People
- Processes
- Finance



Hamilton
Public Works



CITY OF HAMILTON 2012 ENERGY REPORT



Energy Policy & Priorities:

- Council Mandate 2005
- Office of Energy Initiatives 2006
- Corporate Energy Policy 2007 (Target of 20% by 2020)
- Energy Commodity Policy 2007 (Revised 2008)
- Other priorities:
 - Secure goals of Vision 2020
 - Integrate to Strategic Plan
 - Green Energy Act

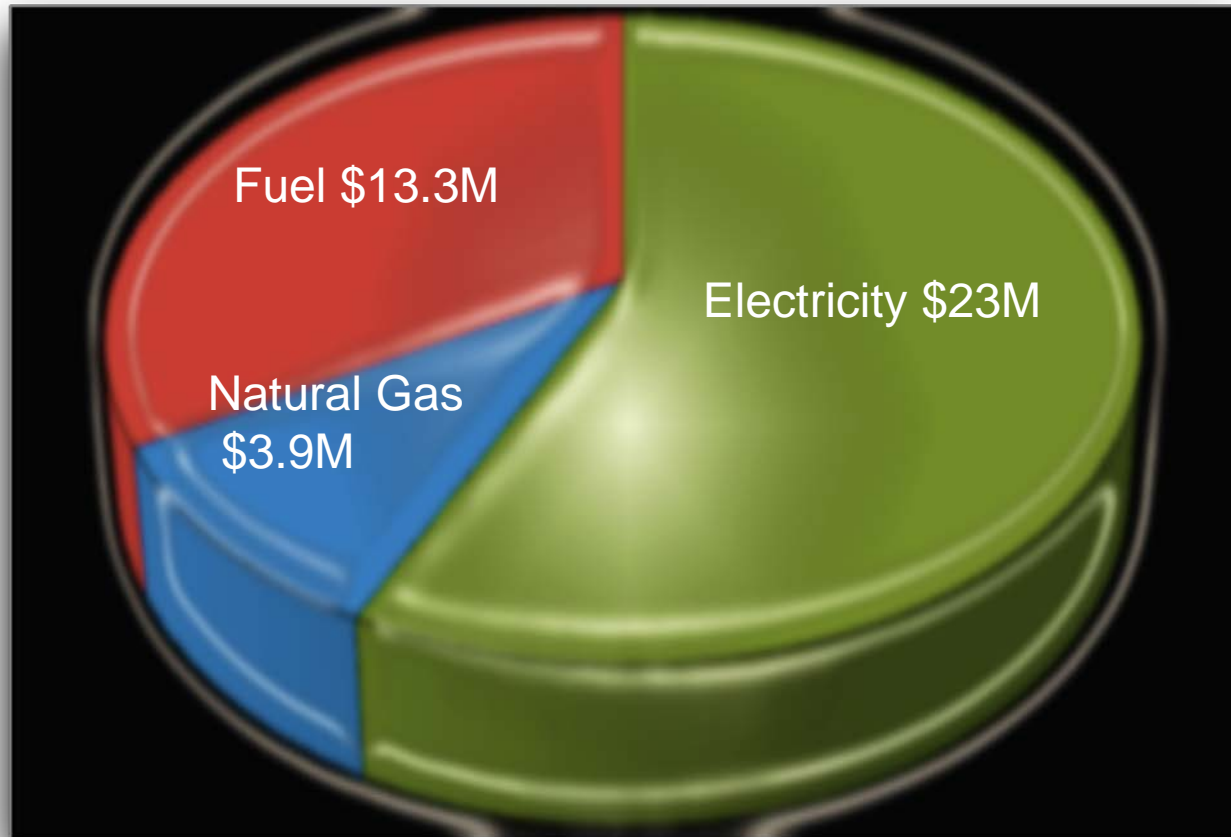
- Community
- People
- Processes
- Finance



Hamilton
Public Works

Energy Costs

- City of Hamilton - Total 2012 Energy Costs \$40.2 Million



- Community
- People
- Processes
- Finance



Hamilton
Public Works

KEY PERFORMANCE INDICATORS (KPI'S) **Corporate Energy Policy Energy Intensity (ekWh/ft²)***

2012 Energy Intensity (ekWh/ft²) is 17% lower than 2005**

2012 Utility Consumption is an average of 14% lower than 2005

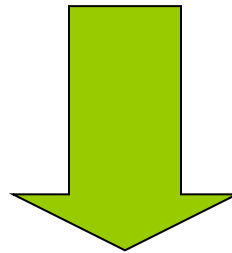
Households save an average of \$22 per year***

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Trend



*ekWh – equivalent kilowatt hours

**Energy Intensity does not include W&WW and O&M sites (for building environment only)

*** \$27M saved over 6 years across 214,400 households

GHG Reductions:

Greenhouse Gas Emission Reductions (Tonnes)



- Community
- People
- Processes
- Finance



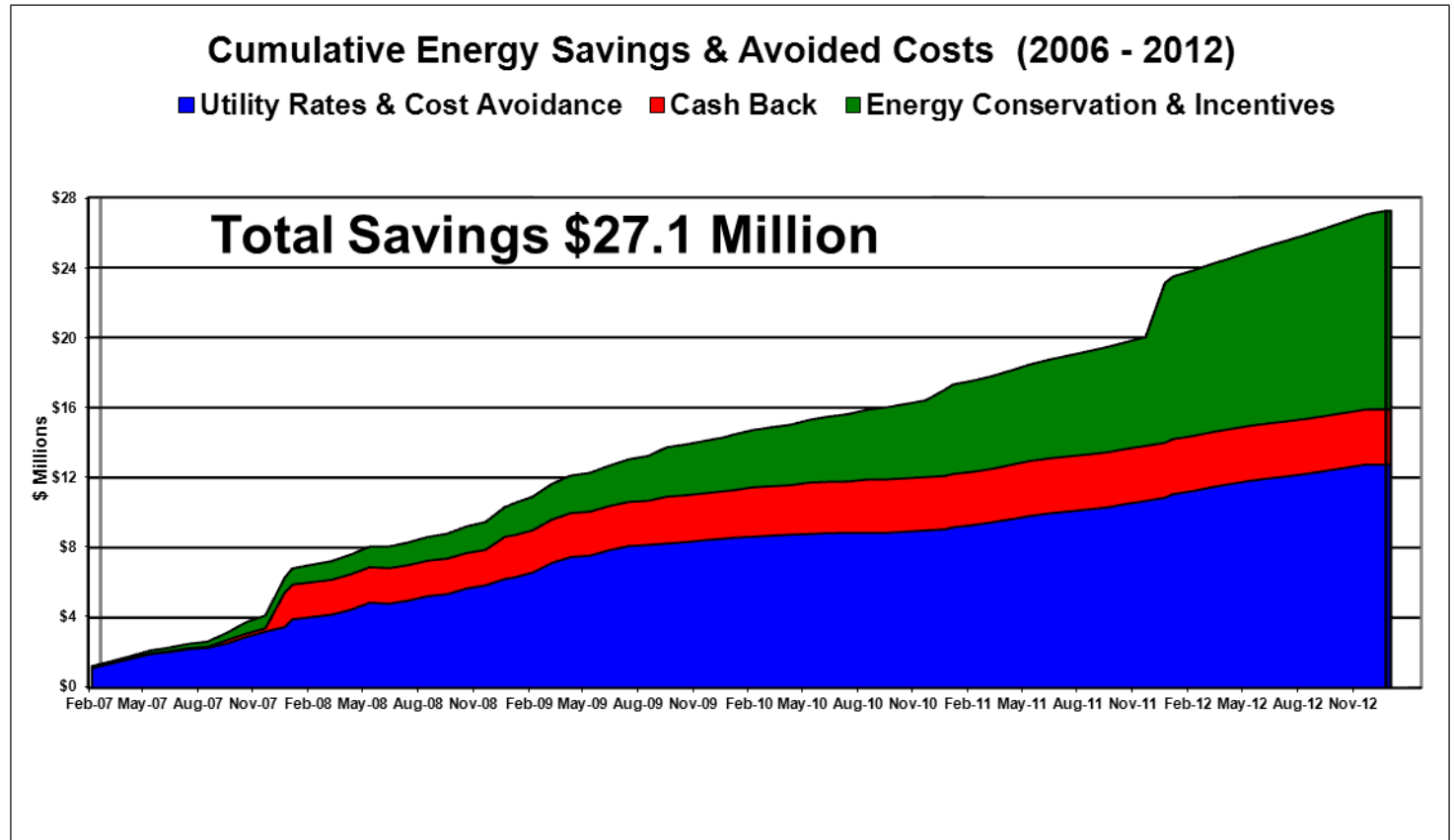
Hamilton
Public Works

City's Gross Cumulative Savings to Date

- Community
- People
- Processes
- Finance



Hamilton
Public Works



Where The Savings Come From:

- **Electricity and Natural Gas Rates (\$13.1M):**
 - Global Adjustment Changes:
 - Additional avoided cost of \$1.5M in 2012
 - Other Rate Savings include:
 - Total cumulative avoided cost savings of \$6.8M
 - Natural Gas Rate Hedging Savings include:
 - Total cumulative avoided cost savings of \$4.8M
- **Cash Back (\$3.2M):**
 - Billing Errors:
 - Total recovered cost of \$3.2 million

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Where the Savings Come From:

- **Energy Conservation & Incentives (\$11.3M):**
 - Project Savings:
 - Total cumulative operational savings of \$7.2M by 2012.
 - Incentives:
 - Total cumulative incentives of \$4.1M

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Overview of Savings and Avoided costs:

- **Direct Savings** (conservation, incentives & recoveries):
 - Energy savings from projects lower consumption – had we done nothing, consumption would be that much higher
 - Incentive cheques from energy savings activities
 - Billing errors resulting in credits
- **Avoided Costs** (utility rate savings):
 - Contracts or rates that required action to secure a lower price, fee or cost (GA)

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Savings and Avoided Costs:

Savings / Avoided Costs	Levy Benefits (Tax Base)	Rate Benefits (Water Rates)	Corporate Total (\$)
Avoided Costs:	\$14,273,900	\$5,802,700	\$20,076,600
Direct Savings:	\$6,852,100	\$661,600	\$7,513,700
Total Savings:	\$21,126,000	\$6,464,300	\$27,590,300

Key Drivers:

Direct Savings:

- Reduced operating costs by \$400,000 from lighting retrofits in Corporate Buildings (Levy) and \$400,000 from the High Lift Pump project (Rate)

Avoided Costs:

- Avoided paying \$1.5M in electricity costs due to reclassification of certain consumers to Class A Tariff in 2012

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Budget Impact

- **2012 Budget vs. Actuals Examples**
 - Corporate Levy
 - Natural Gas Budget \$4.07M, Actual \$3.27
 - Electricity Budget \$10.4M, Actual \$10.2M
 - Total Budget \$14.5M, Actual \$13.5M
 - Rate Budget
 - Natural Gas Budget \$754k, Actual \$674k
 - Electricity Budget \$10.7M, Actual \$9.3M
 - Total Budget \$11.5M, Actual \$10M

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Energy Markets:

- Electricity
 - Global Adjustment charges costs more than commodity
 - Regulatory costs continue to increase (recent increases announced)
- Fuel
 - While market remains volatile and difficult to predict, summer forecast is stable
 - Fuel reserve of \$1.5M available to absorb volatility
- Natural Gas
 - Hedging program and market lowering costs – decreases may not continue
 - Shale gas finds has impact on the supply side
 - Economy and weather not a significant impact on demand at this time
 - Producers looking at shutting down drilling rigs which may lead to lower supply

→ Community
→ People
→ Processes
→ Finance



Hamilton
Public Works

Natural Gas Costs vs. AMO/LAS:

- Community
- People
- Processes
- Finance



Hamilton
Public Works

City of Hamilton Annual Natural Gas Commodity Price



Future Projects and Initiatives for 2013

- Community
- People
- Processes
- Finance



Hamilton
Public Works

- Building Automation System Optimization
- Energy Monitoring and Targeting
- Dedicated Energy Manager – OPA assisted
- Hamilton Water Study
- Outdoor LED's at Fire Stations
- Arena Chiller Optimization Pilot
- Solar
 - 330 Wentworth to be operational by Q3
 - 2 new sites waiting for OPA / FIT approval

Other Office of Energy Initiative Activities

- **Operational roles:**
 - **Hamilton Renewable Power Inc.**
 - Woodward and Glanbrook operational oversight
 - Manage contracts and issues with HCE
 - Analysis of options for increased revenue
 - **Biogas**
 - Manage contracts and operational issues with HCE
 - Analysis of options for increased revenue (sale of environmental attributes)
 - **District Energy**
 - CUP and new sites (Courthouse, McMaster etc)
 - Mechanical maintenance services of downtown core (not including City Hall)
 - **Rates and Regulatory**
 - Global Adjustment
 - OEB Unmetered Load (street lighting) Working Group

- Community
- People
- Processes
- Finance



Hamilton
Public Works

Awards

- Association of Energy Engineers
- Ontario Power Authority



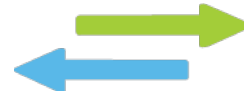
- Community
- People
- Processes
- Finance



Hamilton
Public Works

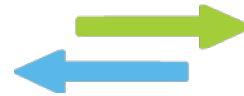
How we get results:

Leveraged
Expertise



Leveraged
Results

Corporate
Energy Policy



HUC targets

City of Hamilton

**Horizon Utilities
Corp.**



**Hamilton Community
Energy**

Union Gas

- Community
- People
- Processes
- Finance



Hamilton
Public Works