Office of Energy Management

Community Centre Conservation Challenge (and other success stories)

"Presentation to the GTA Clean Air Council
April 30, 2010

Oshawa®
Prepare To Be Amazed

Presented by:
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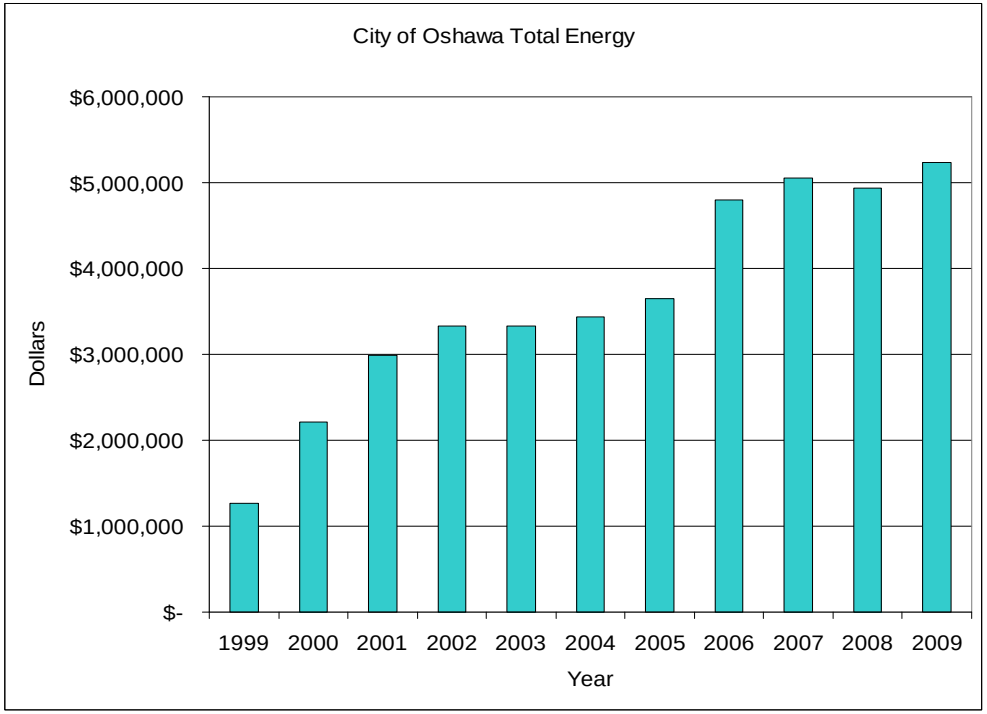
Office of Energy Management

Why Energy Management?



Actual Energy Costs

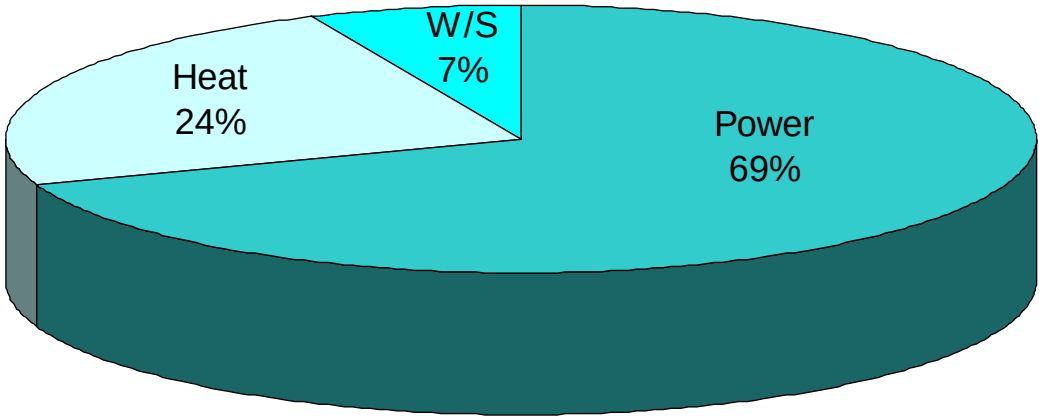
1999	$	1,266,911
2000	$	2,217,113
2001	$	2,986,513
2002	$	3,334,886
2003	$	3,333,871
2004	$	3,434,877
2005	$	3,651,852
2006	$	4,799,189
2007	$	5,053,041
2008	$	4,940,008
2009	$	5,231,898

2010 Budget

Power - $ 3,909,800

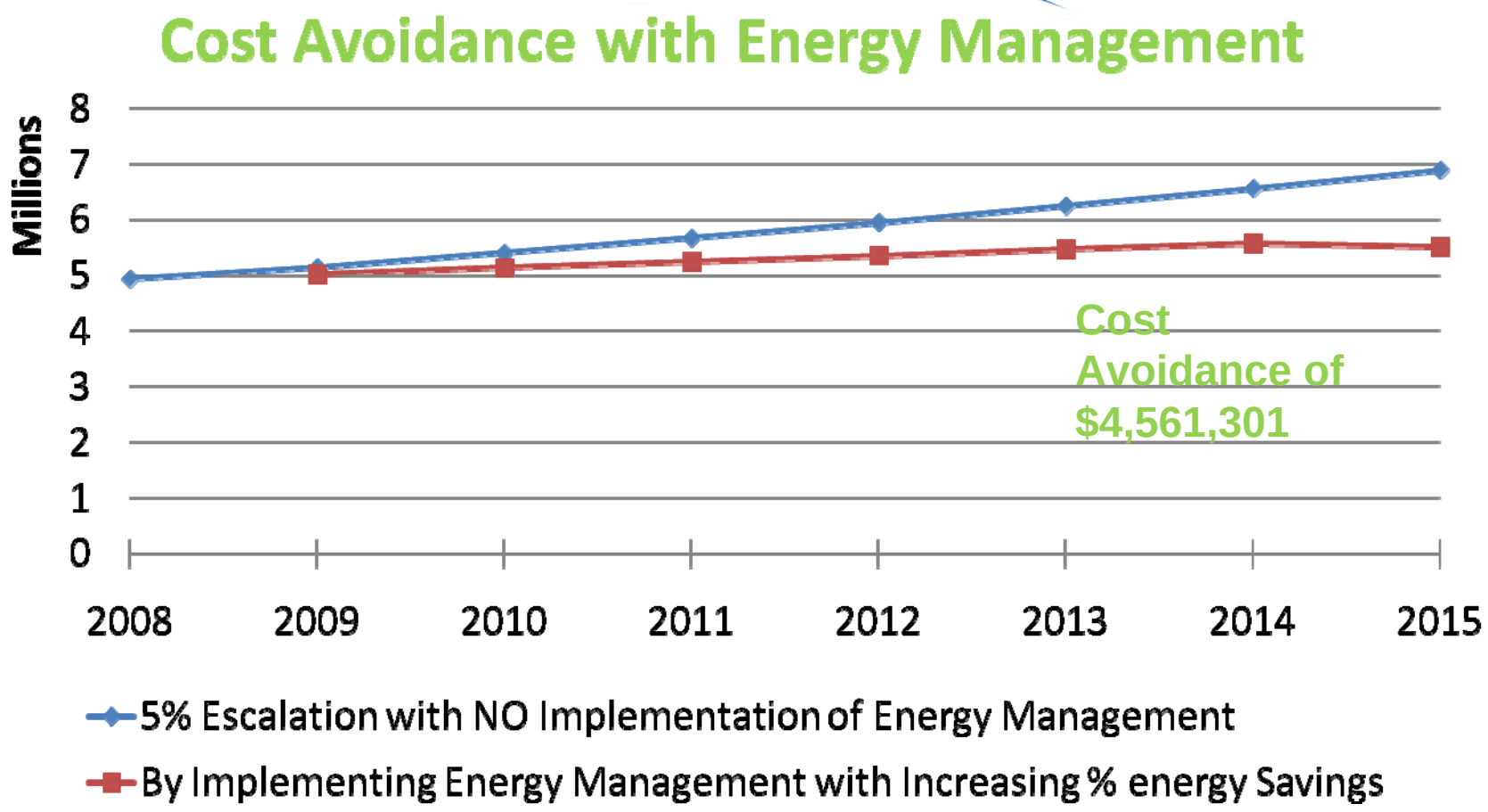
Heat - $ 1,340,500

W/S - $ 377,801



TOTAL - $ 5,628,101

Energy is a Controllable Expense



Why invest in Energy Management?

Improves bottom line

- Short term **AND** long term

Reduces

- Operating costs
- Maintenance costs

Proactive

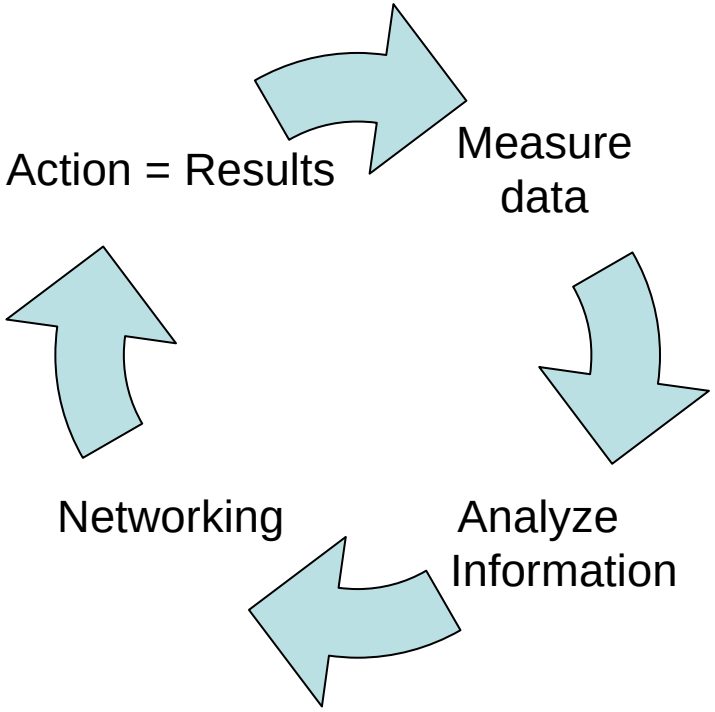
- Prolongs building assets
- Reduces reactive maintenance and emergencies

Why invest in Energy Management?

Emergency repairs can very easily cost <u>three times</u> more than planned repairs/replacements.

- **<u>Reduces</u>** the expected service life
- **<u>Reduces</u>** reliability of the equipment and facilities
- Has **<u>negative impact on end-users</u>**
- **<u>Stress on staff</u>**

What is the function of the OEM?



Energy Management is an ongoing cycle of:

- **Measurement of energy performance**
- **Analysis of data to produce information for decision-making**
  - Energy conservation measures
  - Procurement
  - Functionality
- **Networking**
  - Best Practices
  - Pilot projects
  - Funding and partnership opportunities
- **Actions that produce measurable results.**

OEM Channels of Influence

- OEM does not have line authority over building managers, department directors, or other stakeholders
- The Office must leverage its channels of influence to achieve and sustain high levels of energy efficiency
- To maximum effectiveness, many of the energy initiatives of the Office should be combined with those developed by the Senior Environmental Co-ordinator

Individual Actions & Influence

- 70% of energy savings come from people
- 30% from technology

It's all about the people and changing behaviours, ***NOT*** necessarily buying the latest technology.

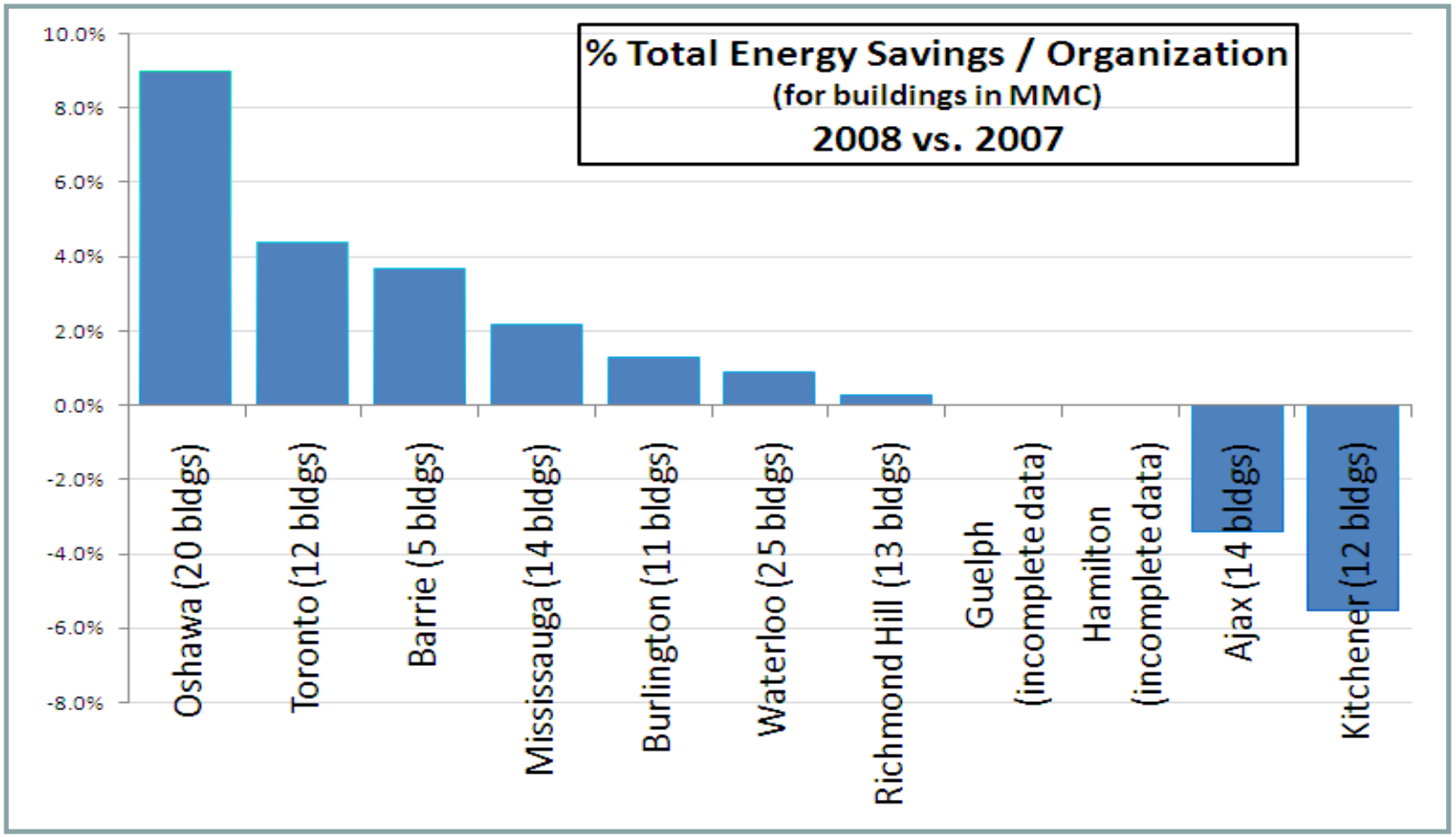
Mayors' Megawatt Challenge

- Brings municipalities together to improve energy efficiency and environmental management in their own buildings.
- Members
  - Ajax, Mississauga, Brampton, Oshawa, Burlington, Richmond Hill, Guelph, Toronto, Kitchener
- Total buildings 127
- Total building area 828,313 m2

The Story To This Point

MMC Participants - Savings Report 2008 vs. 2005							
	Oshawa	Toronto	Richmond Hill	Mississauga	Burlington	Ajax	Kitchener
Savings	20.7%	11.6%	4.4%	0.5%	-1.3%	-12.4%	-13.9%
# Buildings	16	12	12	14	11	14	9

Mayor's Megawatt Challenge



Mayors Megawatt Challenge results

Results as of December 31, 2009

numbers in ( ) are increases

	Savings 2009 (vs. 2008)	Savings %	Savings 2009 (vs. 2007)	Savings %
Electricity	**5,006** MWh	**4.10%**	**9,283** MWh	**7.70%**
Demand	**7** MW	**3.20%**	**7** MW	**3.40%**
Thermal	**5,675** eMWh	**4.40%**	**3,205** eMWh	**3.00%**
Total energy	**10,681** eMWh	**4.30%**	**12,488** eMWh	**5.50%**
Water	**(67)** $10m^3$	**-11.40%**	**(21)** $10m^3$	**-3.30%**

Greenhouse gas emissions (CO_2e) **2,237 tonnes** **2,693 tonnes**

Energy Cost Savings **$646,327** **$1,007,730**

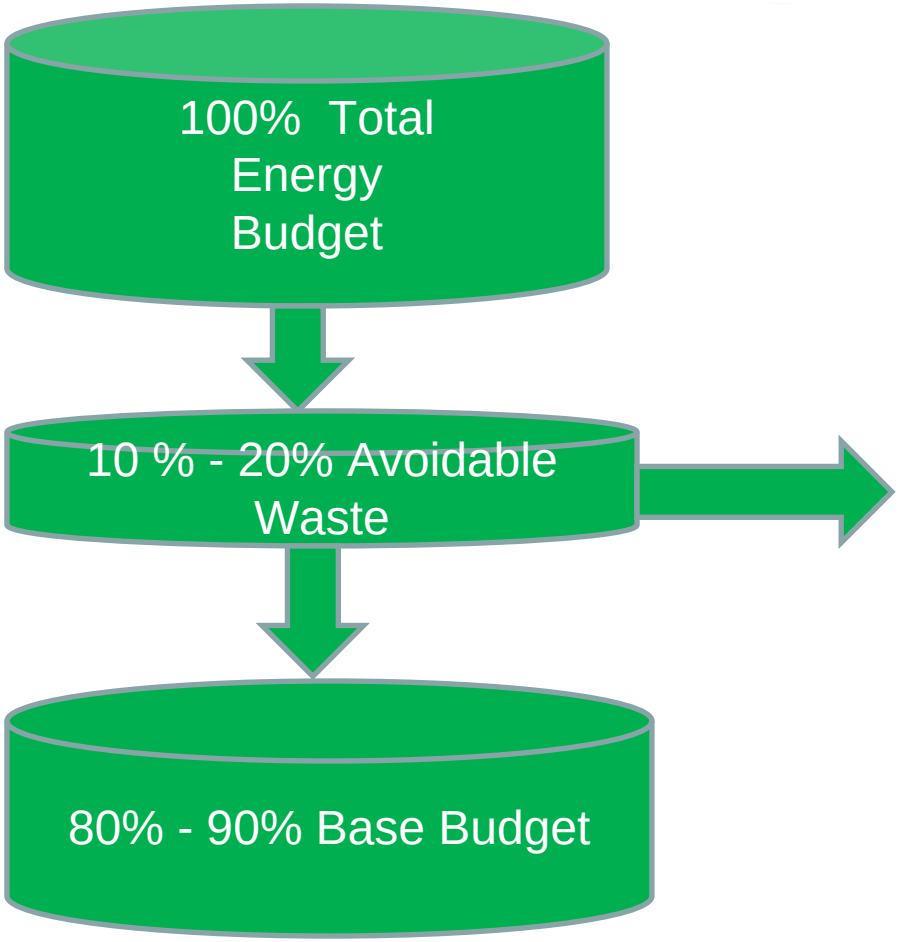
CCCC

- June 1 to August 31, 2009
- Goal – reduce electricity consumption
- Identify and implement **no-cost** energy efficiency improvements and to eliminate waste.

CCCC

- 4 largest and 4 medium-sized recreation facilities were chosen
  - One-third of City's energy budget ($ 2 million)
  - Largest energy consumers
    - (Legends $1 million)
- Facilities already registered as part of the Mayor's Megawatt Challenge

Avoidable Waste



Breakdown of Avoidable Waste	
HYDRO	53%
WATER	32%
HEATING FUEL	15%

CCCC

- Worked with both program and maintenance staff at all facilities to assist in the process, these included:
  - Building Automation System (BAS) optimization of HVAC and lighting
  - Manual control of lighting
  - Staff awareness training
  - Identifying the relationship between programming, maintenance and energy consumption.

Actions Log & Implementation

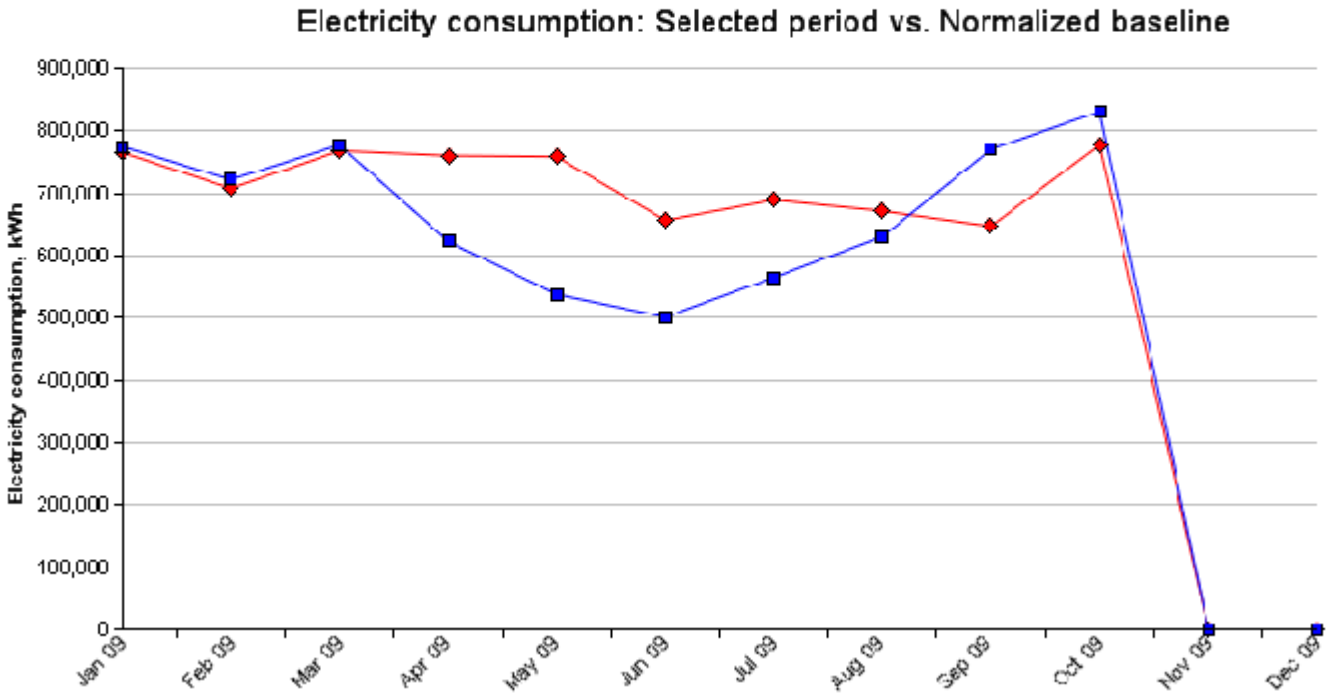
- List of low cost/no cost operational actions to be taken immediately

- Immediate implementation of low/no cost operational and systems improvement activity

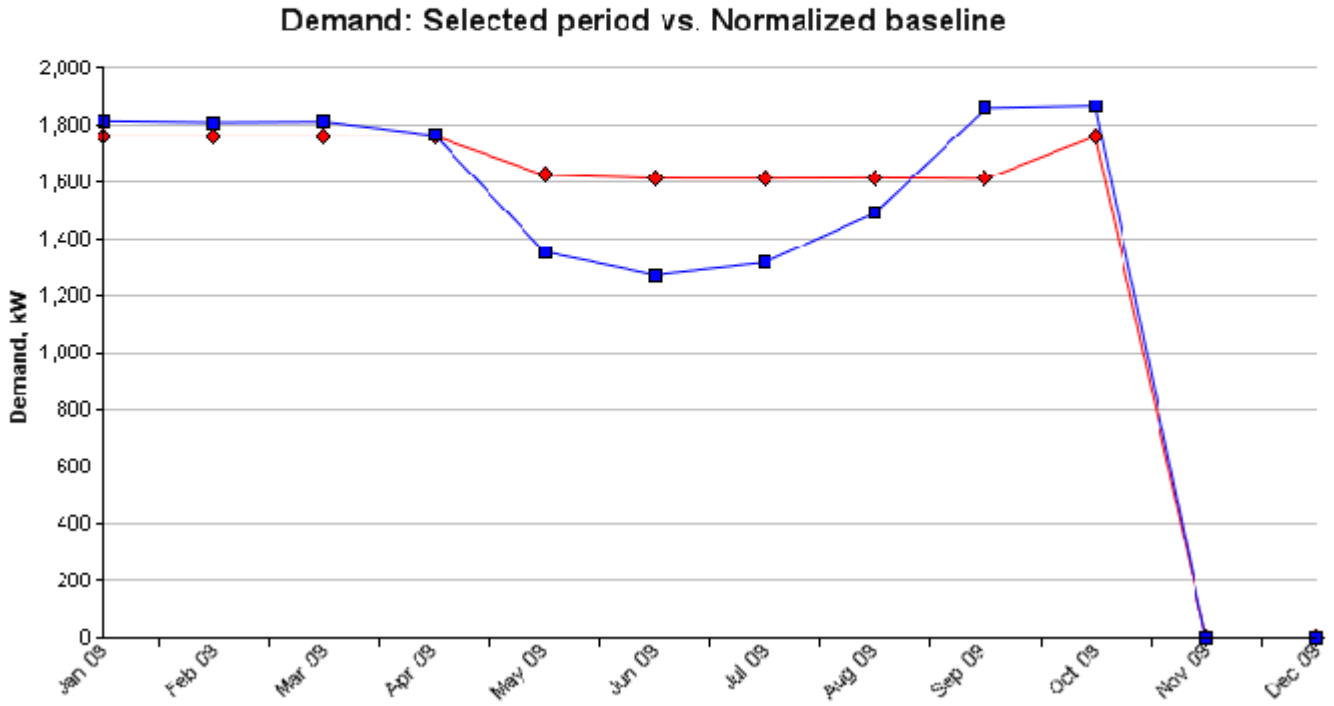
OEM-CCCC Training

- Training raised the bar on energy management understanding and appreciation
- Created more informed, experienced staff
  - Program
  - Maintenance
- Promoted a more consistent approach to building operations and management

4 Recreation Centres



4 Recreation Centres



CCCC Results

	2008	2009	Difference	%
Medium				
Harman Park Arena	83,171	45,926	- 37,245	**-45%**
Northview Community Centre	139,623	88,657	- 50,967	-37%
Children's Arena	36,595	24,152	- 12,444	-34%
Arts Resource Centre	30,125	19,956	- 10,169	-34%
Total Medium Facilities (kWh)	**289,515**	**178,691**		
Large				
Legends Centre	1,805,194	1,466,189	- 339,005	**-19%**
Donevan Recreational Complex	269,854	228,751	- 41,103	-15%
South Oshawa Community Centre	445,554	382,120	- 63,433	-14%
Civic Auditorium	417,365	373,834	- 43,531	-10%
Total Large Facilities (kWh)	**2,937,967**	**2,450,895**		
Total Electricity Consumption(kWh)	**3,227,482**	**2,629,586**	**- 597,896**	**-19%**

2009 Rewards & Follow-up

- Presented winning team leaders with trophies at Council
- Thank you luncheon for all participants
  - Identified Best Practices
- NRCAN/City of Oshawa Dollars to Cent$ trainings
- Results are included in Leisure Guide

Impacts

- Annual verified saving total - $ 90,000
  - Eight buildings only
- Part of budget package
  - 0.9% tax increase
- “Showed them the money!”
- $ 1.4 million capital projects for 2010

2010 Challenges

- Community Centre Conservation Challenge II
  - Expanded to include Water & Gas

- Firehall Challenge
  - Electricity only

Homework

Identify ten “low-cost, no-cost” energy conservation measures that you can do and email to:

edavies@oshawa.ca

There are risks and costs to action. But they are far less than the long range risks of comfortable inaction."

John .F. Kennedy

THANK YOU/QUESTIONS

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Office of Energy Management
April 2010