

# Energy Management Branch

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## Program Success & Future Service Delivery Opportunities

Barry Thompson & Adam McMullin  
Energy Management Branch

# Background

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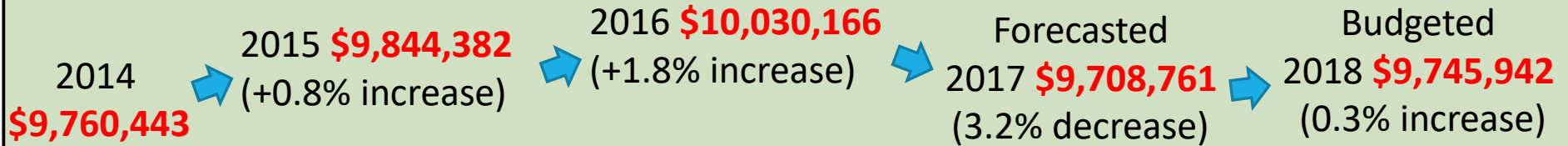
Branch was created in 2013

Branch is responsible for;

- Reducing consumption of energy and water for City owned facility and infrastructure to manage utility costs
- Leading energy management initiatives
- Establishment of the corporate utility budget
- Securing financial incentives
- Providing input into new construction and major renovation projects in regards to energy efficiency
- Integrating energy management into all areas of city operations

# Impact

## Actual Cost



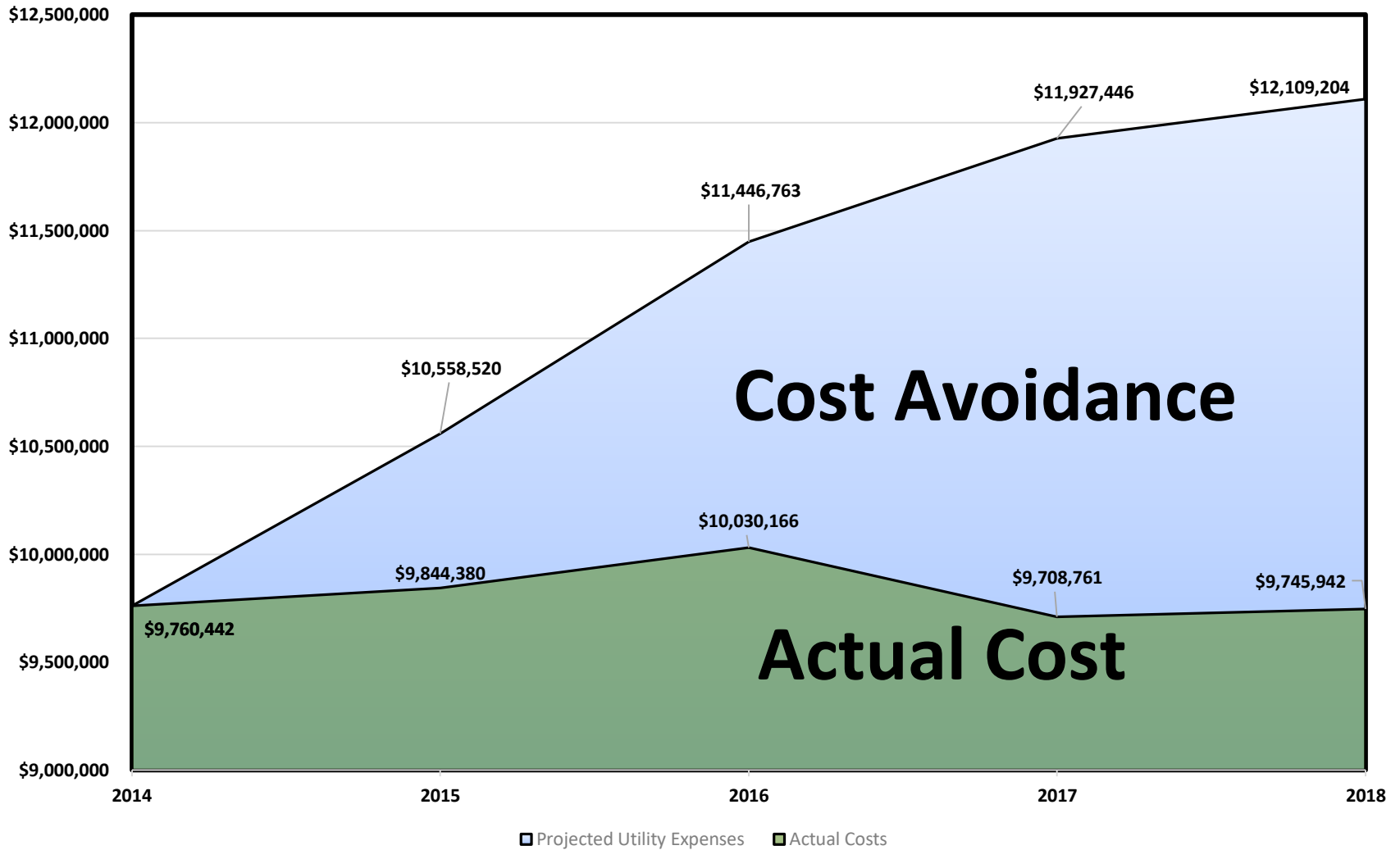
## Projected Costs



## Cost Avoidance

	2015	2016	2017	2018
Cost Avoidance	<b>\$714,140</b>	<b>\$1,416,597</b> <b>(\$2,130,737)</b>	<b>\$2,218,685</b> <b>(\$4,349,421)</b>	<b>\$2,363,262</b> <b>(\$6,712,684)</b>

## Energy Management Impact 2014 - 2018



# Impact

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- Cost Avoidance: \$2,130,737 (2014 – 2016)
- Energy Savings: 11,875,694 ekWh
- Incentives: \$1,446,267 (2014 – Current)
- GHG Reduction: 1,254 metric tonnes (EC02)

## 2018 Budget impact!

- \$806,904 (7.6%) reduction from 2017 budget
  - \$550,130 consumption impact
  - \$256,774 rate impact
  - \$194,755 taxation budget reduction

# Energy Management Integration (Roads, Parks & Fleet)

- LED Street light (Roads, Parks & Fleet)

- Savings:

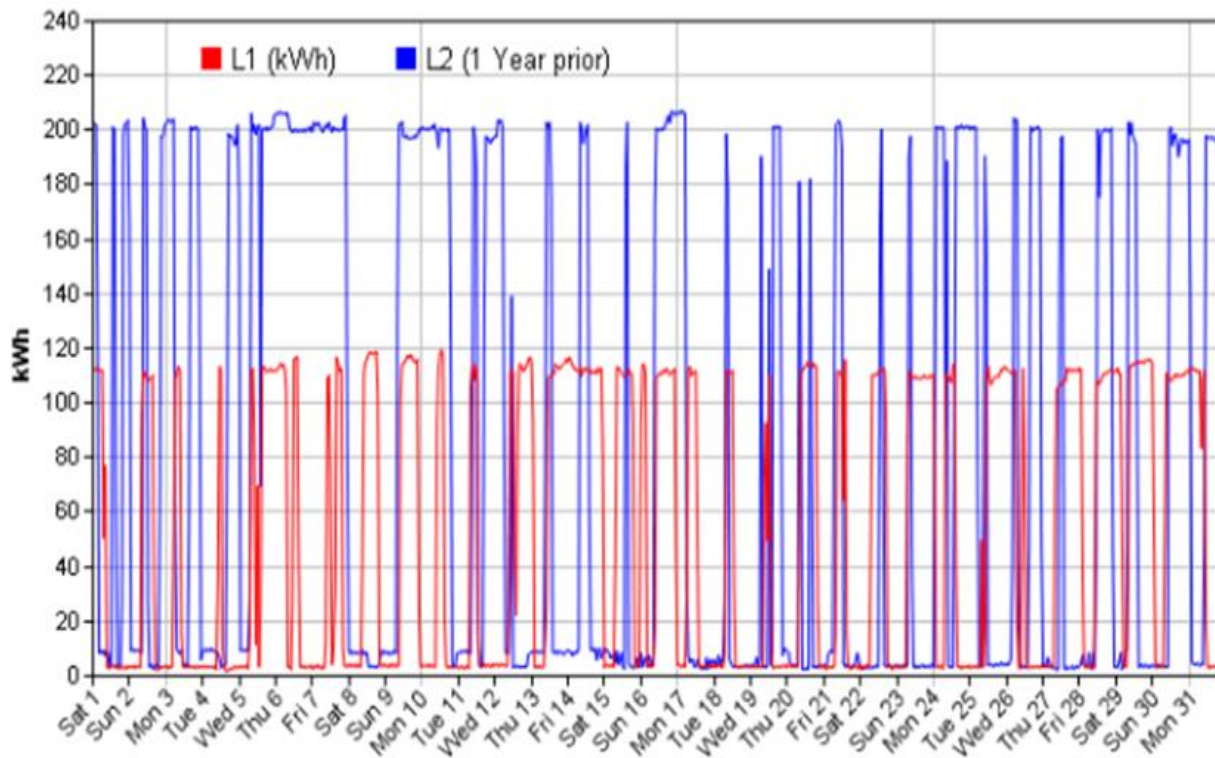
- 4,997,094 kWh /yr (\$759,558)

- Incentive:

- \$969,065

# Energy Management Integration – Water Services

Water Variable Frequency Drive Installations on motors (Water supply)

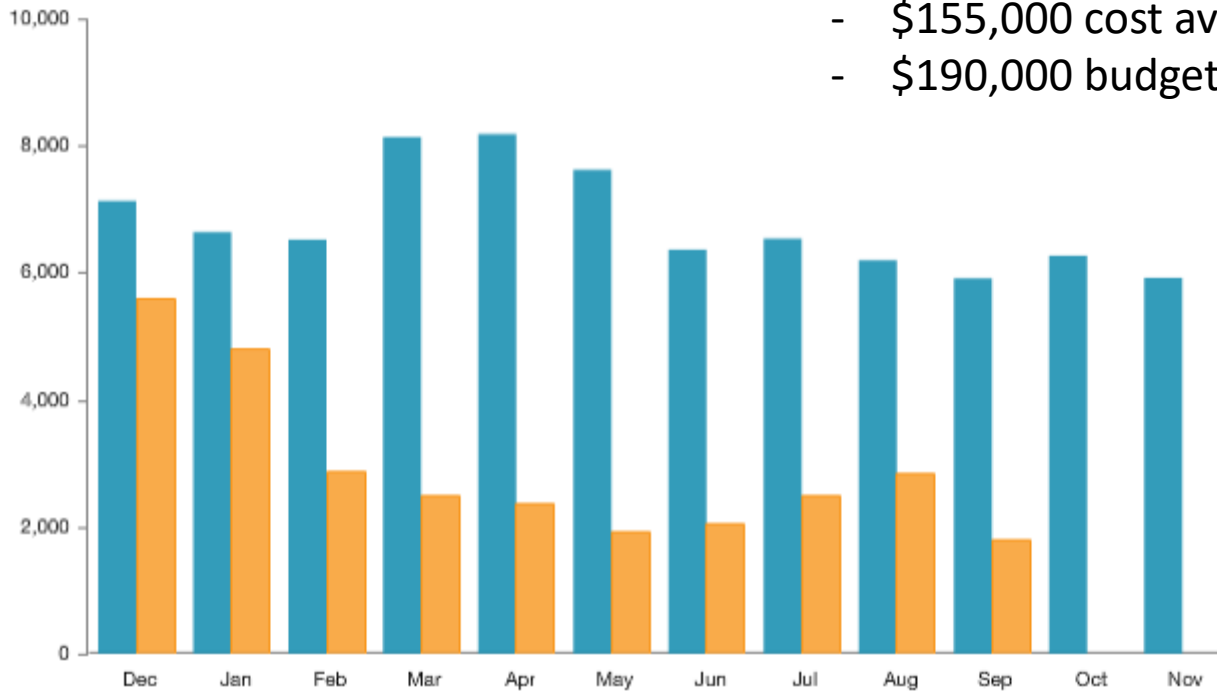


- Energy into Action Innovation Award (2016)
- \$100,000+ incentives
- 369,523 kWh / year (\$60,000)

# Energy Management Integration Waste Water Services

## Water Consumption Reduction

Monthly Use



- 38,000m3 (60%) reduction in water usage (YTD)
- \$155,000 cost avoidance (YTD)
- \$190,000 budget reduction (2018 vs. 2017)



# Energy Management Integration Waste Water Services

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## Electricity Bill Reclassification

- Move to Class A utility billing structure
- Estimated rate reduction of 15% for 2018 budget  
(\$225,000 cost reduction)
- \$65,000 cost avoidance (July through September) in 2017

# Energy Management Integration Recreation Services

## Multi-Use Facility Competition

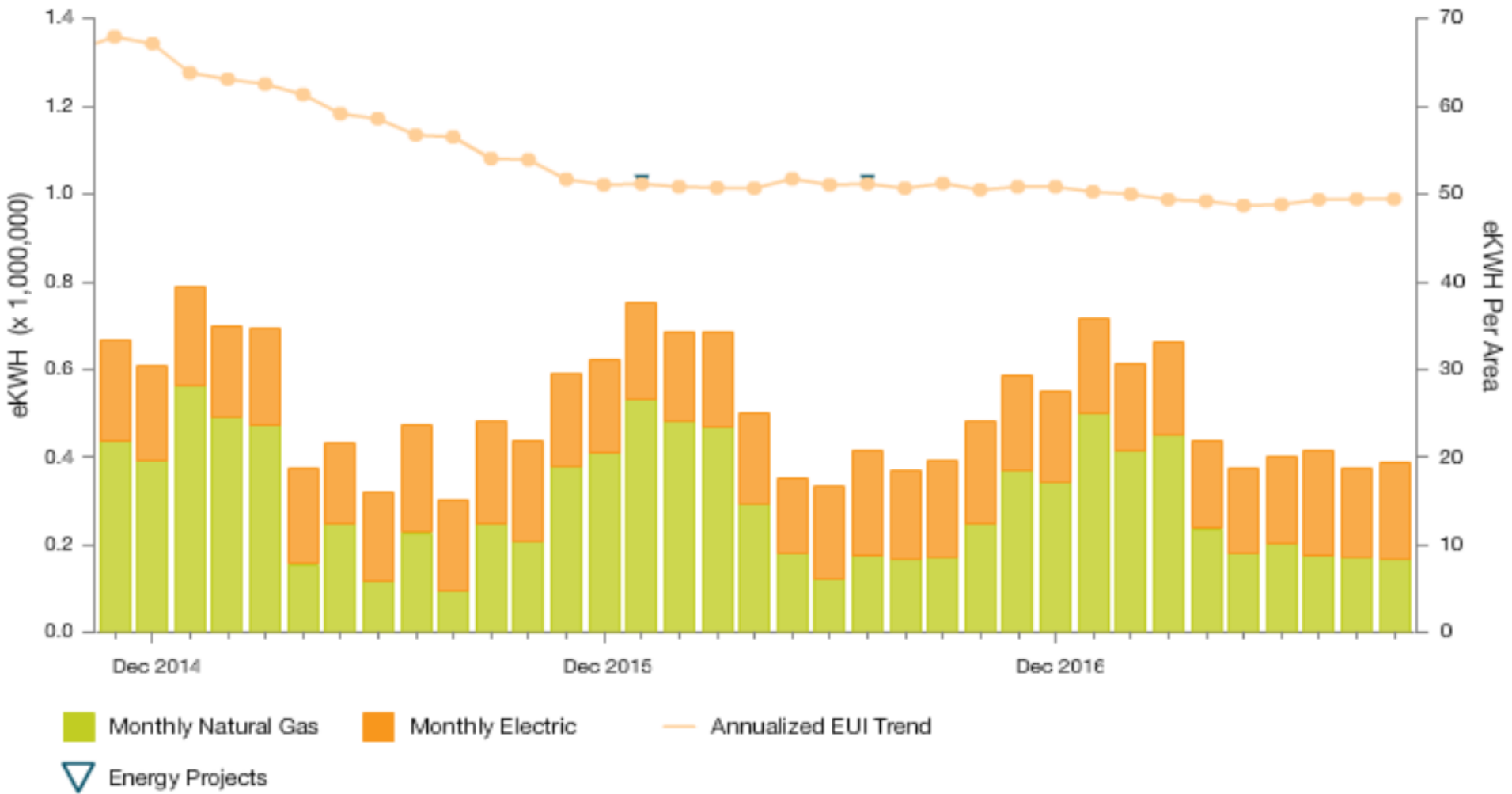
### Final Results

Facility	Dec/14 - Feb/15, Consumption (kWh)	Dec/13 - Feb/14, Consumption (kWh)	Savings (kWh)	% Change	Cost Avoidance
Allandale Recreation Centre	656,933	746,762	-89,829	-12.0%	-\$11,678
Holly Community Centre	1,021,921	1,100,505	-78,584	-7.1%	-\$10,216
East Bayfield Community Centre	913,415	959,158	-45,743	-4.8%	-\$5,947
Total:	2,592,269	2,806,425	-214,156	-7.6%	-\$27,840

- Allandale Rec. Centre: 2016 Award Winner – Mayor’s Megawatt



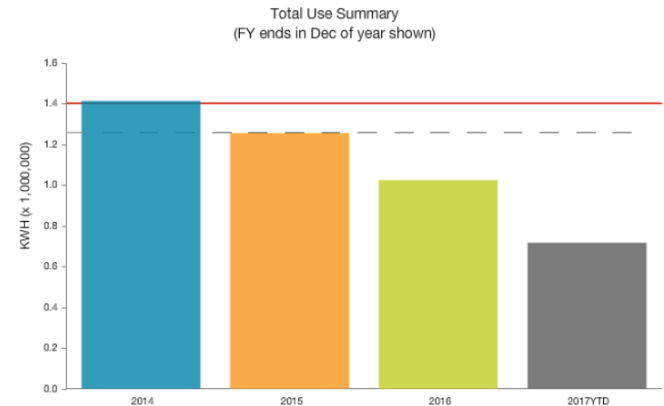
# Energy Use Intensity



# Energy Management Integration Facilities

## Operations Centre

- Optimize block and electric heater controls
- Improved scheduling temperature control of garage spaces and office areas
- Garage area lighting retrofit (\$24,000 incentive)
- 30% reduction in electricity consumption since 2014



## Daily Average Usage

Percentage Change from  
Previous Year To  
Current Year



24.9 %

### Current Year:

Oct 2016 - Sep 2017  
77.67 CUBICM

### Previous Year:

Oct 2015 - Sep 2016  
103.49 CUBICM

## City Hall

- New VRF heating and cooling system
- New Building Automation control system
- Electricity savings \$85,000 / year
- Natural Gas Savings \$20,000 / year
- Incentive \$56,722

# What's Next

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- Continue implementation of Energy Management Plan, lighting, controls, optimization of operations
- Update Energy Management Plan for 2019 create new targets implementation plans using studies underway
- Studies for 2018 including District Energy RFI, opportunities for uses of landfill gas, fleet electric vehicle analysis
- Staff are exploring funding opportunities from upper levels of government related to Greenhouse Gas emission reduction
- Analyzing implications and benefits to current requirements to access funding

# Thank You

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