

Energy Management Branch

2018 Program Success & Overview

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Manager of Energy Management

Background

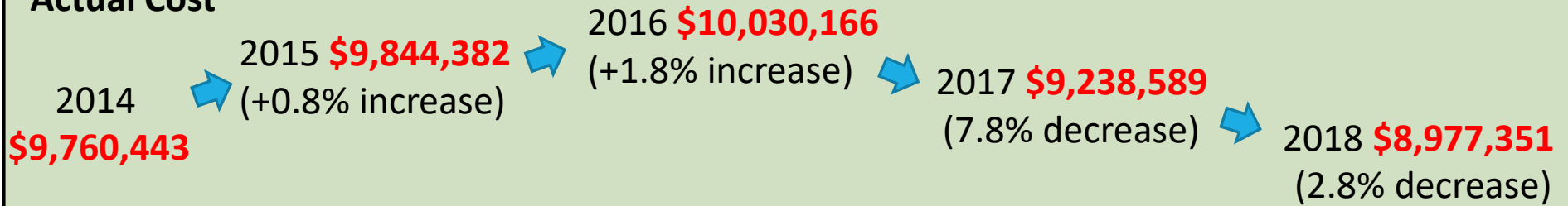
Branch was created in 2013

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



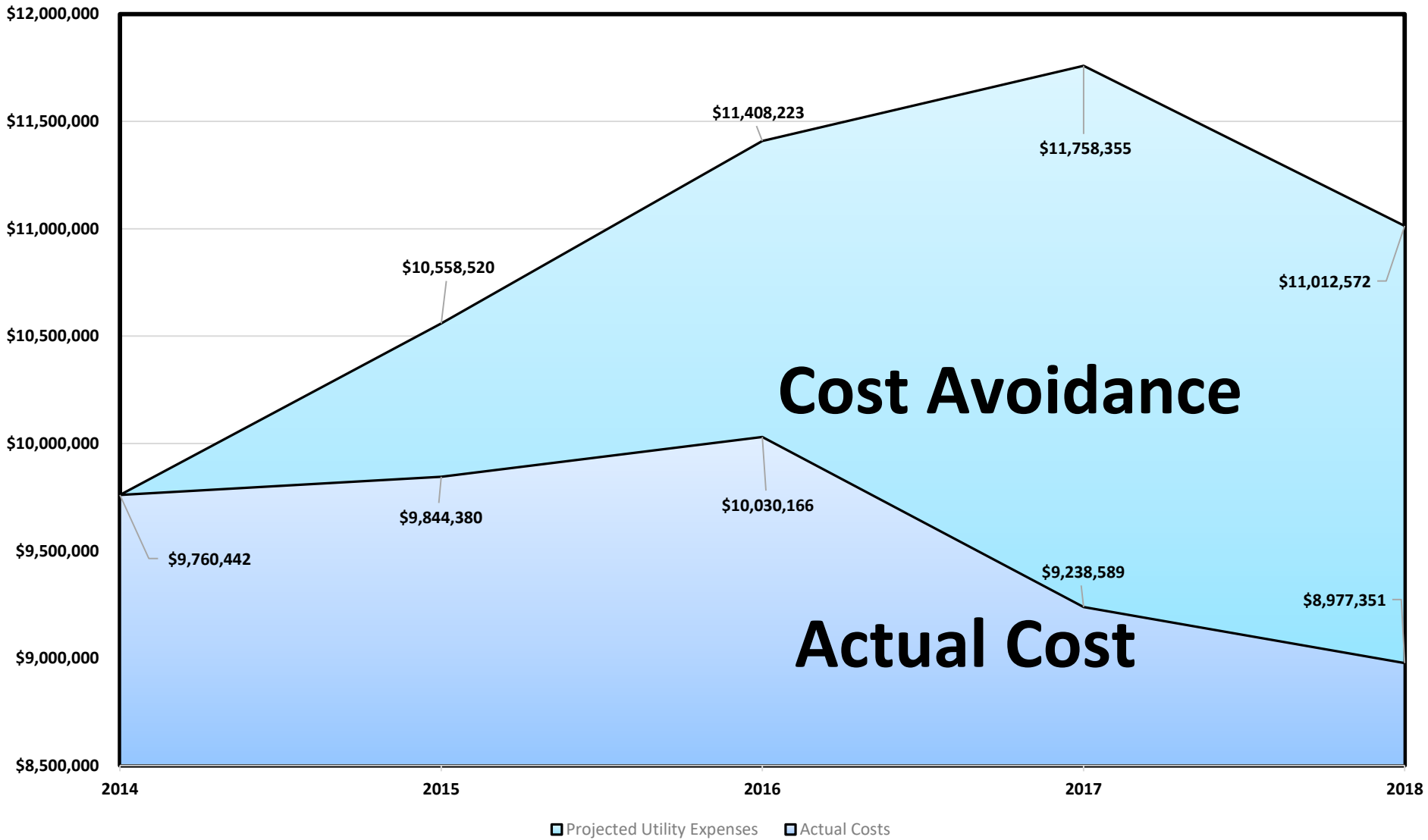
Projected Costs













Cost Avoidance

	2015	2016	2017	2018
Cost Avoidance	\$714,140	\$1,378,057 (\$2,092,197)	\$2,519,766 (\$4,611,963)	\$2,035,221 (\$6,647,184)

Energy Management Impact 2014 - 2018

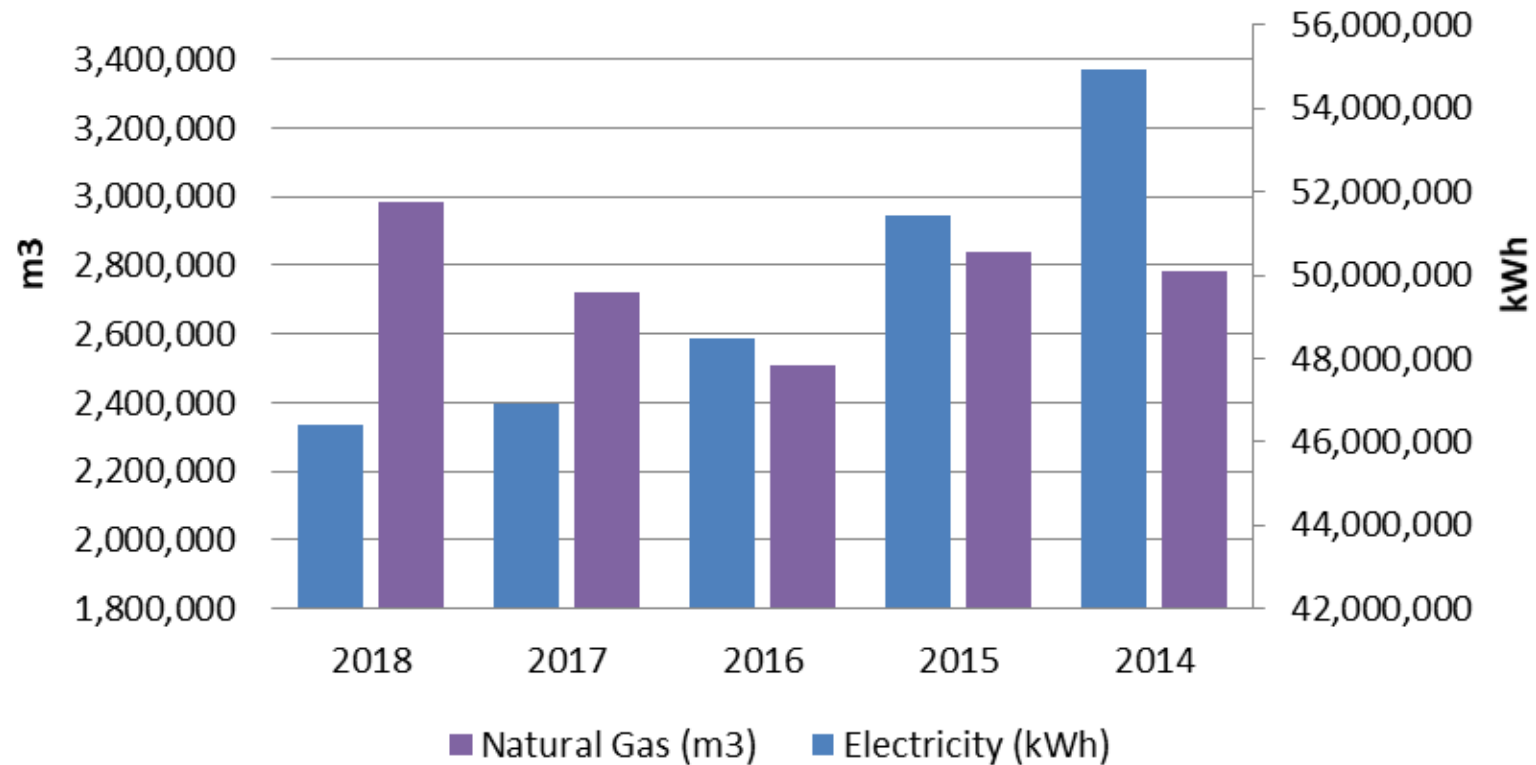


2018 Energy Summary

- Electricity Consumption  1.1% / Rate  8%
- Natural Gas Consumption  10% / Rate  3%
- Water Consumption  13% / Rate  5%
- Budget Variance  7.9%  \$768,589
- 2018 vs 2017  2.8%  \$261,238

2018 Energy Summary

Energy Usage Trend 2014 - 2018



Energy Performance Drivers

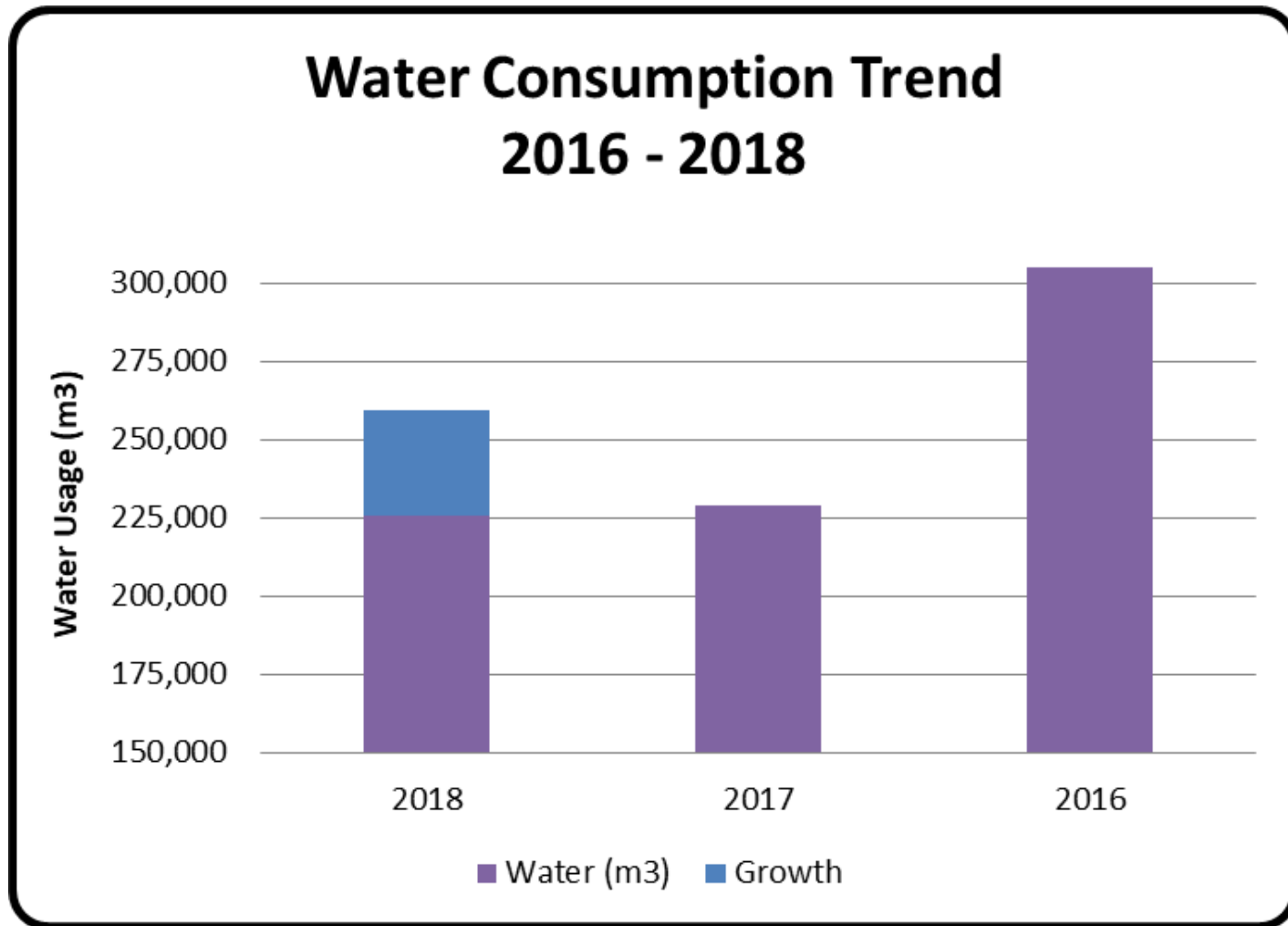
Growth

- Incremental (ie. Traffic Signals / New Park Services)
- New Facilities (ie. Bradford Street / EMS Campus)
- 2018 Water Services:

Ground Water –	24,471 m ³	\$105,380
Parks –	<u>9,426m³</u>	<u>\$79,982</u>
Total	33,897 m ³	\$185,362

Represents 2% base budget cost increase from 2017

Energy Performance Drivers



Energy Performance Drivers

Weather:

- Jan/18 Average Temperature: -7.8C
- Jan/17 Average Temperature: -3.7C

- Aug/18 Average Temperature: 20.8C
- Aug/17 Average Temperature: 17.9C

**Colder = More Heating =
More Natural Gas**

**Hotter = More Cooling =
More Electricity**

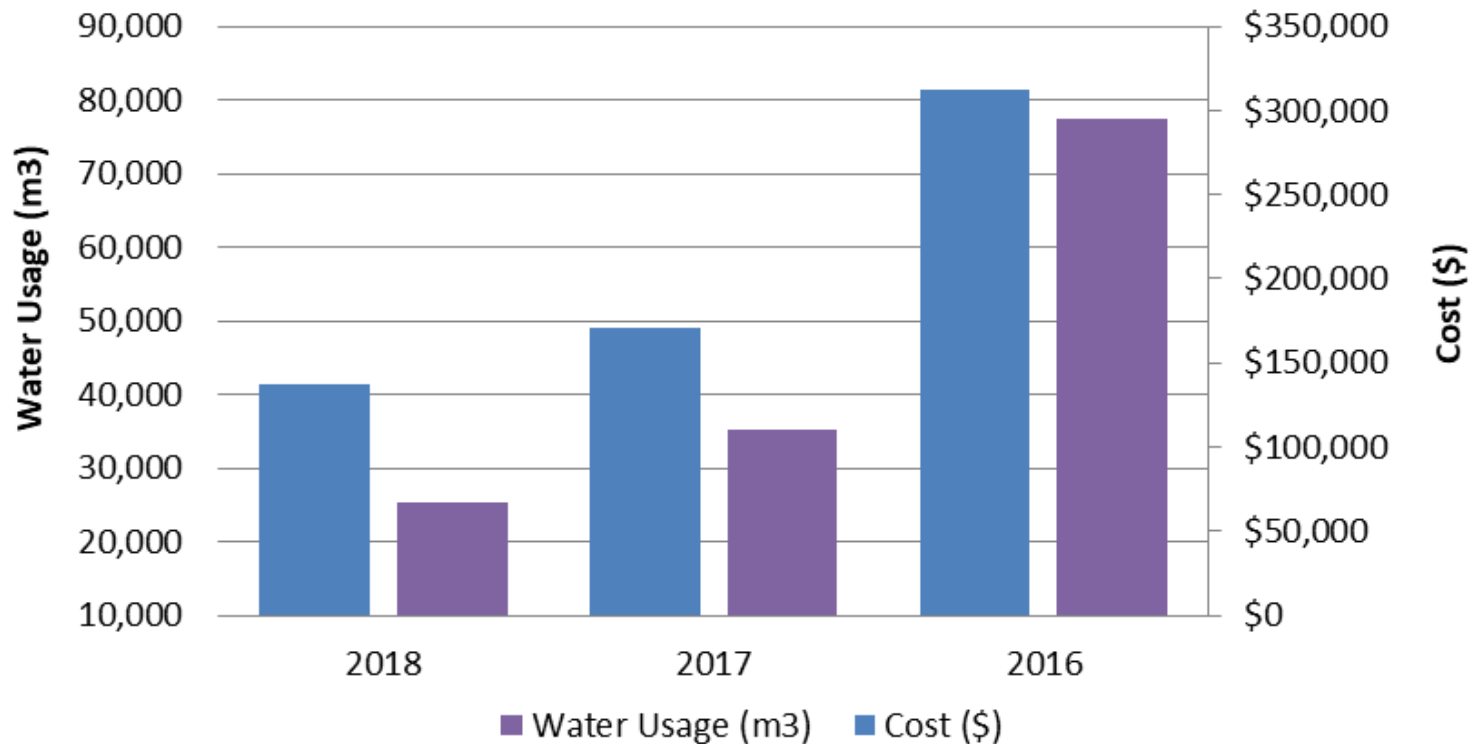
Energy Performance Drivers

Conservation: 2018 Highlights

- Library HVAC Modernization: 36% kWh Reduction (\$55k cost avoidance)
- EBCC BAS Renewal & Optimization: 8% kWh Reduction (\$43K Cost Avoidance)
- Mayor's Megawatt Challenge Award: 16% Energy Reduction (City Hall)
- Capital Project Implementation:
 - \$160,426 invested
 - \$48,087 incentives received
 - \$69,188 annual cost avoidance
 - 1.6 year simple Payback
- Incentives: \$154,000 (2018), \$1.6 million (2015 – 2018)
- WWTF
 - kWh rate savings 25% (\$157,873)
 - Water reduction 67% (since 2016)

Energy Performance Drivers

**WWTF Water Usage & Cost Trend
2016 - 2018**



2019 Outlook

- Update / Renewal of the City's Conservation and Demand Management Plan
- Initiation of a Community Greenhouse Gas Inventory and Reduction Strategy
- Energy conservation capital project implementation
- 2020 Utility Budgeting and Capital Plan Development
- Recommissioning work (Chiller Plants / Boiler System / Refrigeration Plants / Natatorium Spaces)

Thank You

