



Utility Management Report Mid-Year Audit July 2016 – December 2016

Energy Audit Team

Paul Andress, Executive Director of Operations – DISD

Debbie Monschke, Assistant Superintendent - DISD

Angela Alfonso, Utility Specialist - DISD

Josh Roden, EIT, CEM – TD

Justin Bowker, PE, Vice President, Engineering - TD

Orland Hilliard, CEM, Account Manager - TD

Bob Wilken, CEM, Executive Account Manager – TD



Summary of Utility Cost and Usage

Base Year Fiscal Year (2005-2006)	Fiscal Year 2012-2013	Fiscal Year 2013-2014	Fiscal Year 2014-2015	Fiscal Year 2015-2016	Fiscal Year 2016-2017 (Est. Annual Total)* (w/o Bell & BHS)	Fiscal Year 2016-2017 (Est. Annual Total)* (w/ Bell & BHS)
Total Utility Cost \$6,957,534	\$6,806,387	\$7,422,598	\$7,440,670	\$7,939,463	\$8,190,909	\$8,624,954
Total Energy Mmbtu (Gas & Elect) 213,131	235,623	235,248	239,547	224,055	226,053	244,078
Total District SqFt 3,553,417	4,761,856	4,943,330	5,032,004	5,032,004	5,031,236	5,646,889
Total Cost/SqFt (ECI) \$1.96	\$1.43	\$1.50	\$1.48	\$1.58	\$1.63	\$1.53
Energy Use Index kBtu/SF (EUI) 60.0	49.5	51.2	47.6	44.5	44.9	43.2

* Est. Annual Total calculated by multiplying 6 month reporting period values by the previous three year average 6 month factor (first 6 months/total fiscal year)

Analysis By Utility Type (6 mo)

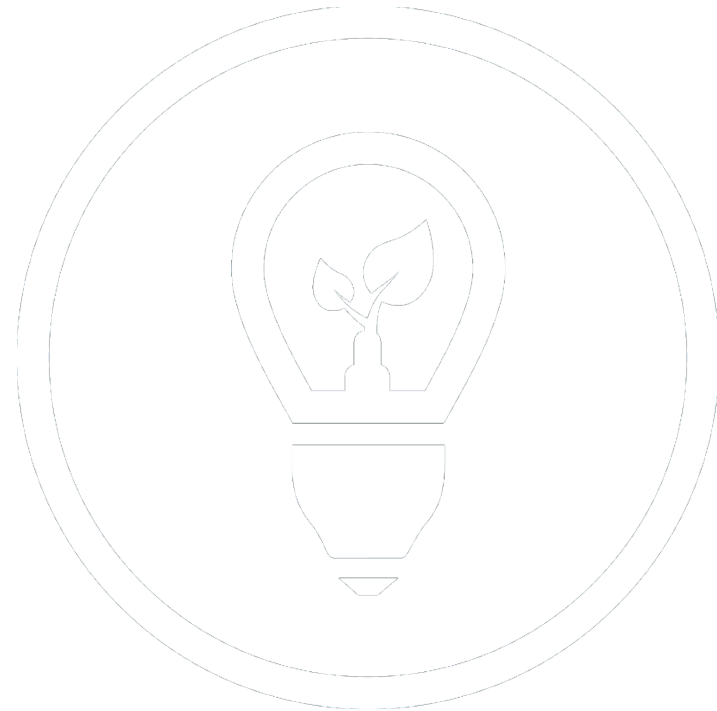
Audit Period

Electricity

- Effective rate decreased by **1%** ↓
- Consumption increased by **11%** ↑
- **2%** less cooling degree days ↓
- Net increase in dollars of **\$273,530** ↑

Natural Gas

- Effective rate increased by **22%** ↑
- Consumption decreased by **4%** ↓
- **6%** more heating degree days ↑
- Net increase in dollars of **\$23,170** ↑



Analysis By Utility Type (6 mo)

Domestic/Sewer/Storm

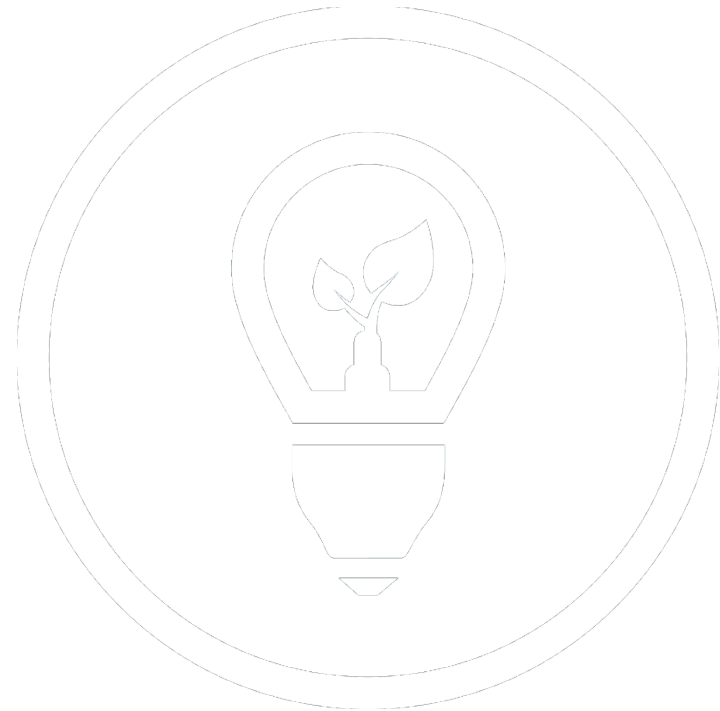
- Domestic effective rate increased **2%** ↑
- Domestic consumption increased **15%** ↑
- Domestic net increase in dollars of **\$87,150** ↑

Irrigation Water

- Irrigation effective rate increased **14%** ↑
- Irrigation consumption decreased **30%** ↓
 - Rainfall down 34%. (Jul-Dec 2015: 25.2"; Jul-Dec 2016: 16.7")
- Irrigation net decrease in dollars of **\$72,935** ↓

Refuse

- Net increase in dollars of **\$16,630** ↑

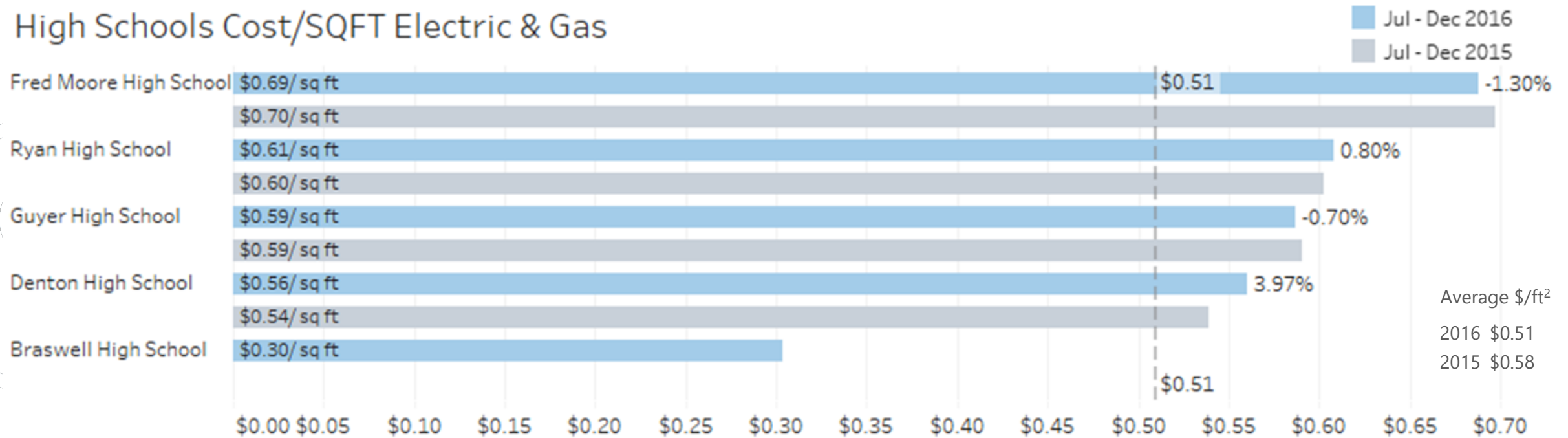


Total Cost Comparison By Utility

Utility	First 6 Months		% Change	Cost Change (\$)
	FY 2015-2016	FY 2016-2017		
Electric	\$2,837,502	\$3,111,032	10%	\$273,530
Gas	\$134,636	\$157,805	17%	\$23,169
Irrigation	\$348,186	\$275,252	-21%	-\$72,934
Dom/Sewer/Storm Water	\$484,178	\$571,328	18%	\$87,150
Refuse	\$420,016	\$436,647	4%	\$16,631
Total	\$4,224,518	\$4,552,064	8%	\$327,546

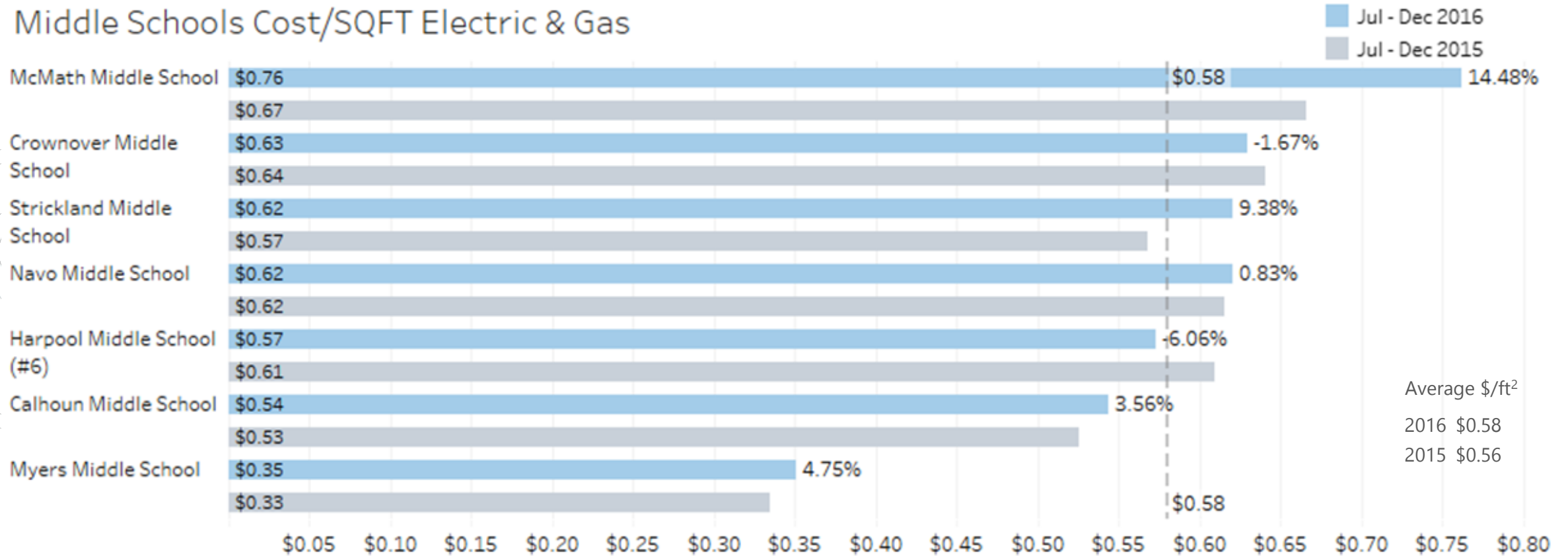
High School Gas & Electrical Cost per Square Foot

High Schools Cost/SQFT Electric & Gas



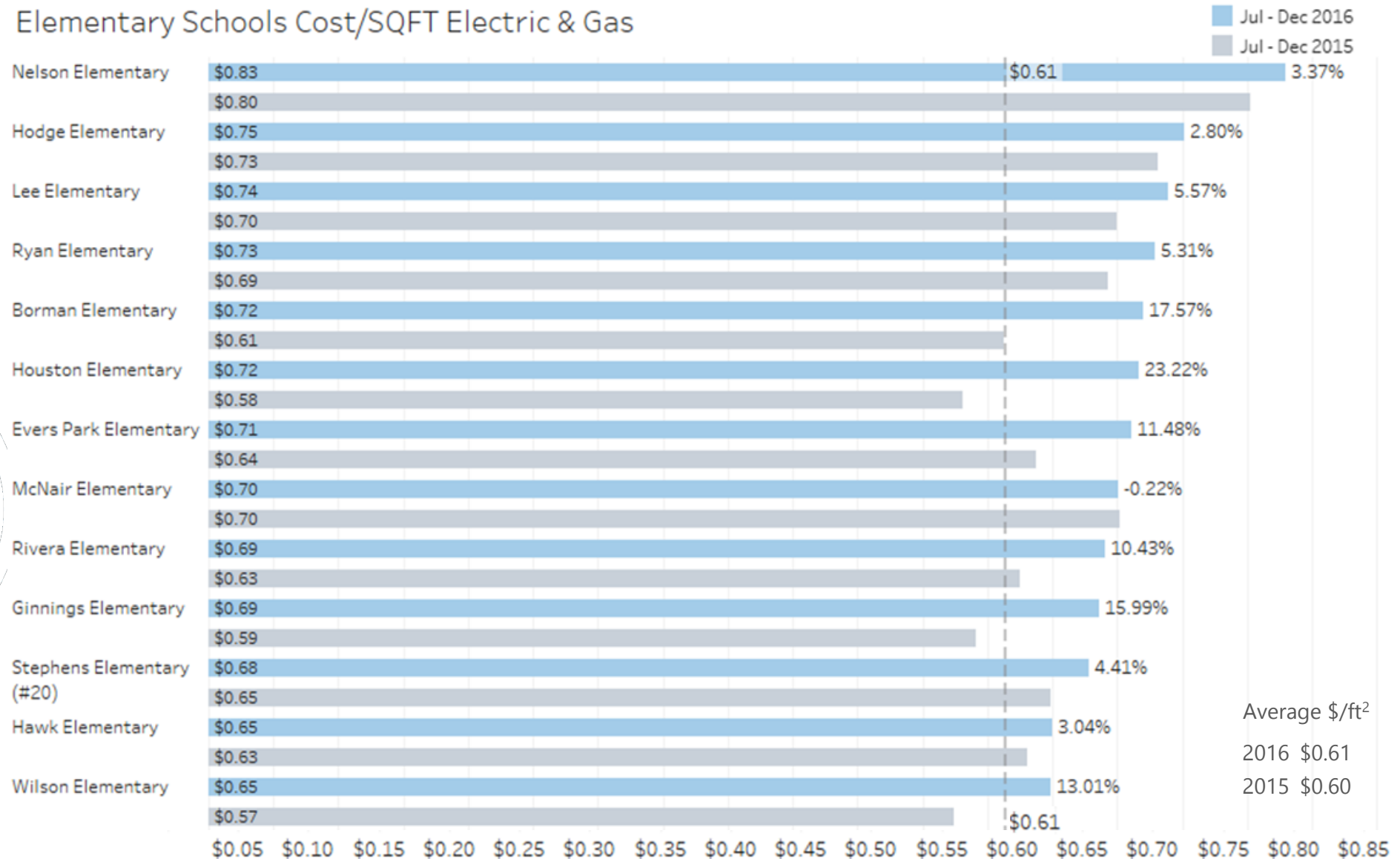
Middle School Gas & Electrical Cost per Square Foot

Middle Schools Cost/SQFT Electric & Gas



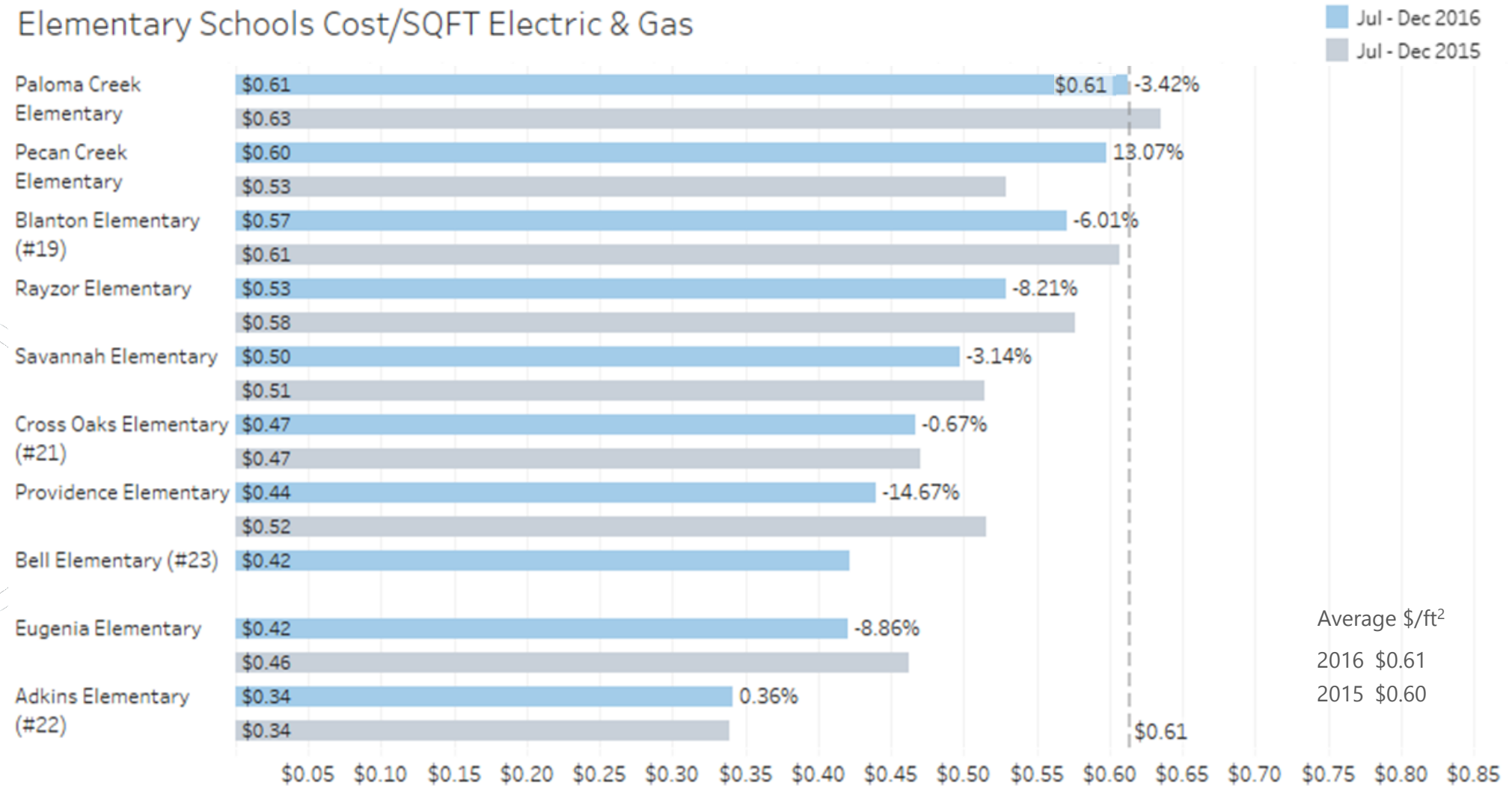
Elementary School Gas & Electrical Cost per Square

Elementary Schools Cost/SQFT Electric & Gas



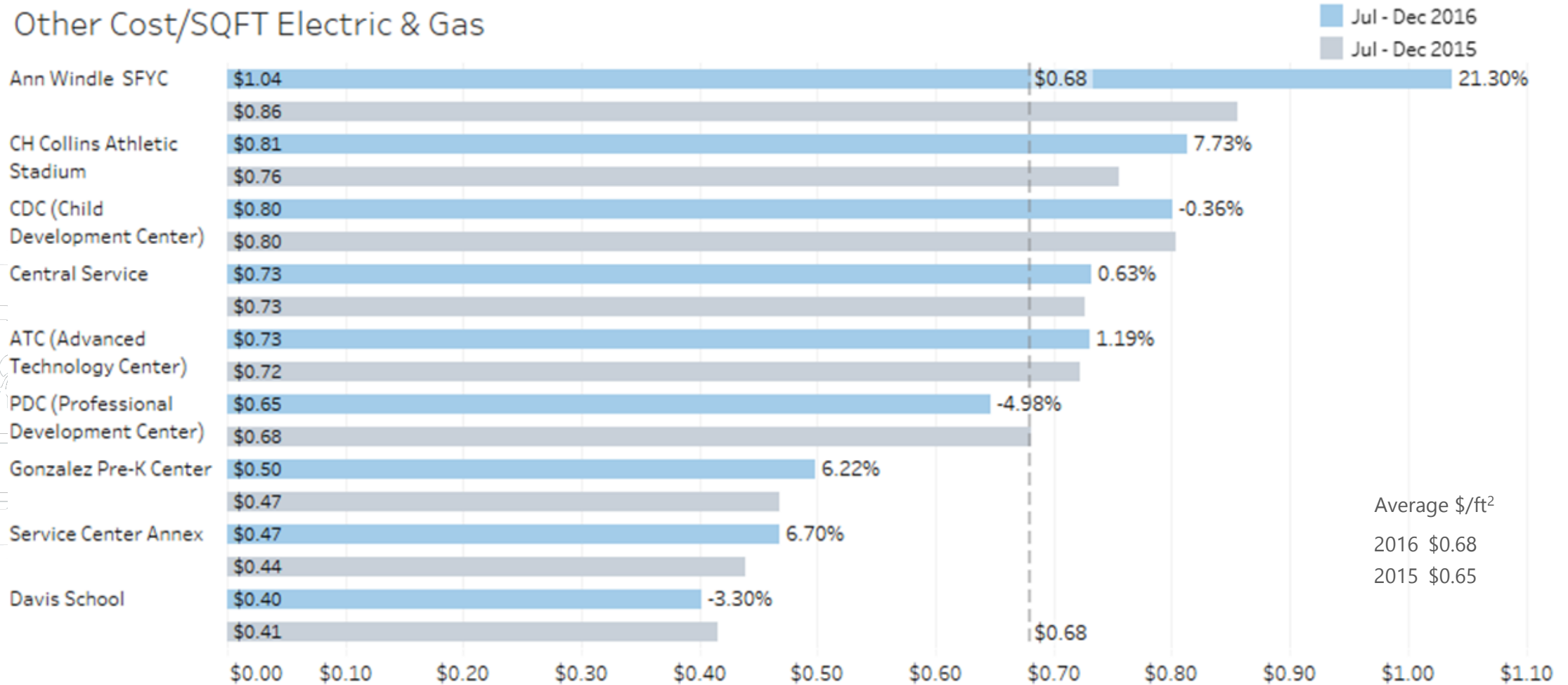
Elementary School Gas & Electrical Cost per Square Foot

Elementary Schools Cost/SQFT Electric & Gas



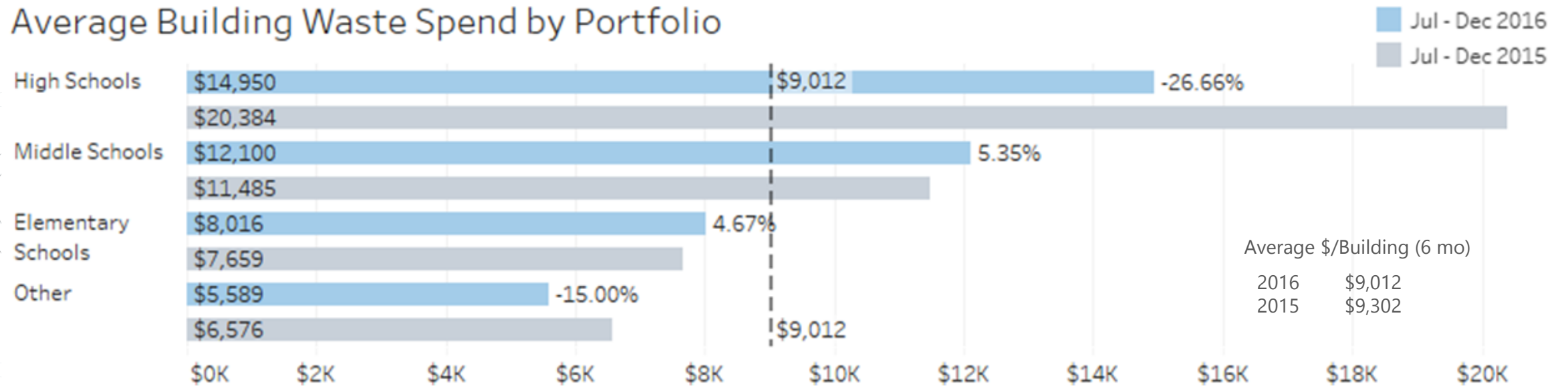
Other Building Gas & Electrical Cost per Square Foot

Other Cost/SQFT Electric & Gas



Refuse

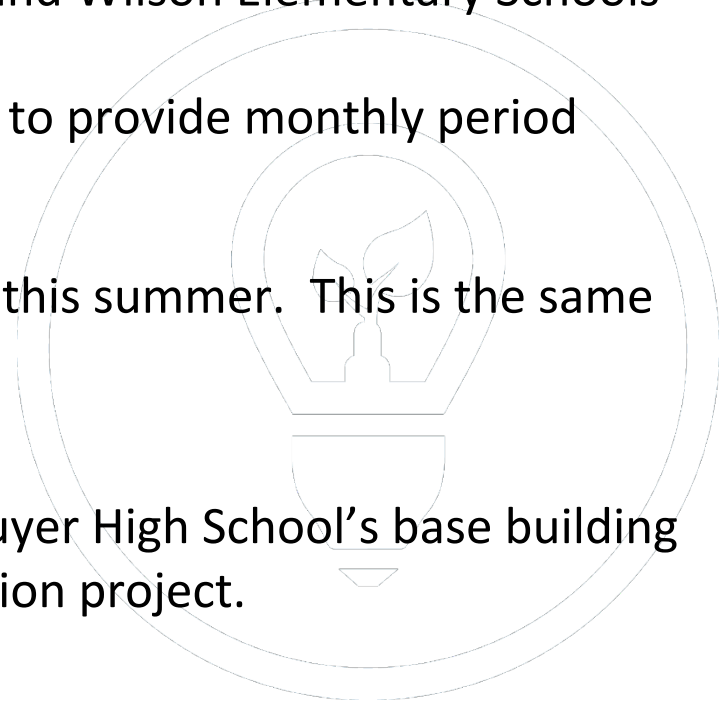
Average Building Waste Spend by Portfolio





Recent Accomplishments

- Major water leaks discovered and repaired at McNair and Wilson Elementary Schools
- Enhanced Energy Print Utility Bill Management Service to provide monthly period alerts for high utility use or cost values.
- Awarded Smart Irrigation Contract to be implemented this summer. This is the same system as Braswell HS, Bell ES and Rodriquez MS.
 - \$117,349 in annual irrigation water savings
- Integrated the Control Sequence Energy Retrofit for Guyer High School's base building systems into the specs for the 9th Grade Center expansion project.
 - \$5,524 in annual electric savings
- Discussed Green Sense program with DME.
 - Not cost effective at this time.



Looking Ahead

- Present audit reports to the board three months closer to audit period in 2017 (next time)
- Issue RFP for outdoor lighting retrofit contained in 2013 Bond Program
 - \$50,718 in annual electric savings
 - \$20,000 one time rebate
- Working with TASB on Solar PV Opportunities for existing campuses
- Working with Architects and Engineers for Solar PV Opportunities on next elementary school
- Develop RFP for replacement of large Chillers at Ryan High School contained in 2013 Bond
 - Energy savings and rebates TBD
- Petition Denton Municipal Utilities to split up Domestic / Irrigation water accounts

