



Utility Management Report Full-Year Audit July 2016 – June 2017

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

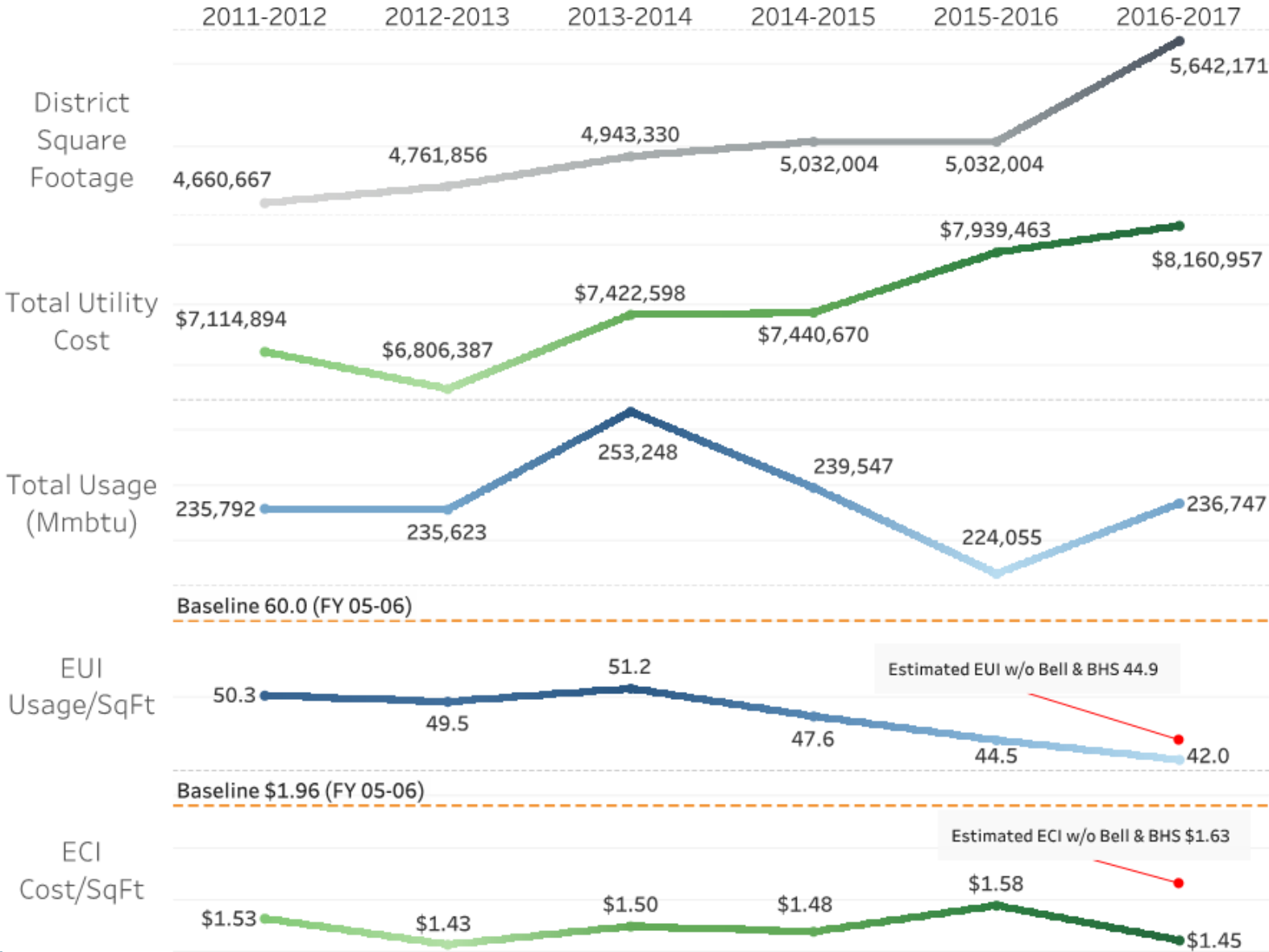
Arnoldo Villarreal, Project Manager - TD

Orland Hilliard, CEM, Account Manager - TD

Bob Wilken, CEM, Executive Account Manager – TD



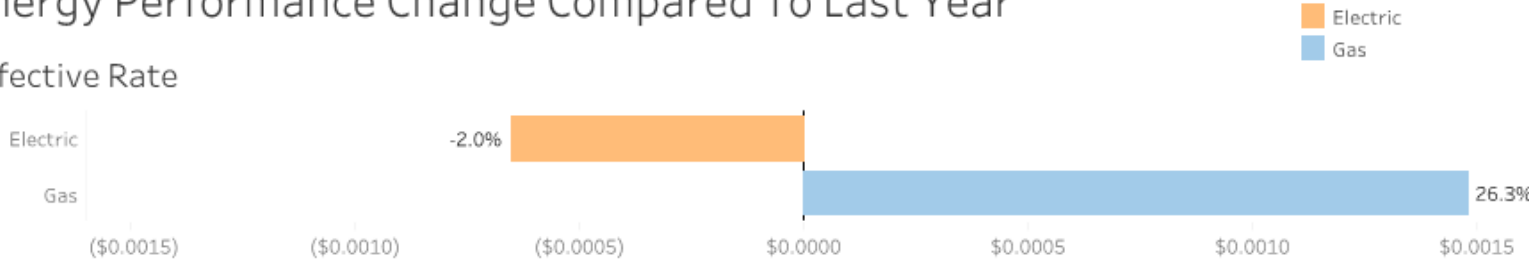
Summary of Utility Cost and Usage



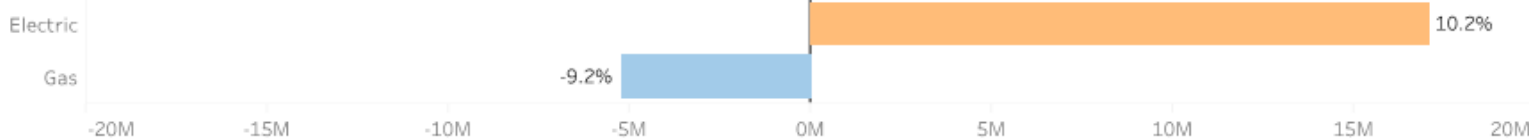
Analysis By Utility Type

Energy Performance Change Compared To Last Year

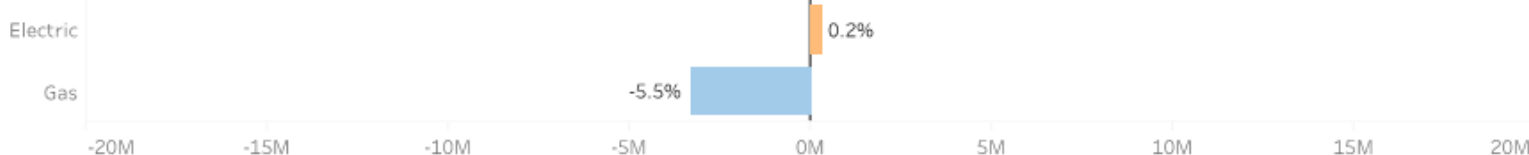
Effective Rate



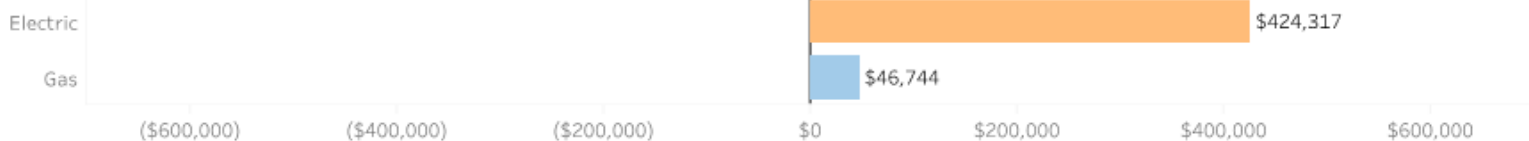
Consumption (kBtu)



Weather Normalized Consumption (kBtu)



Cost



Analysis By Utility Type

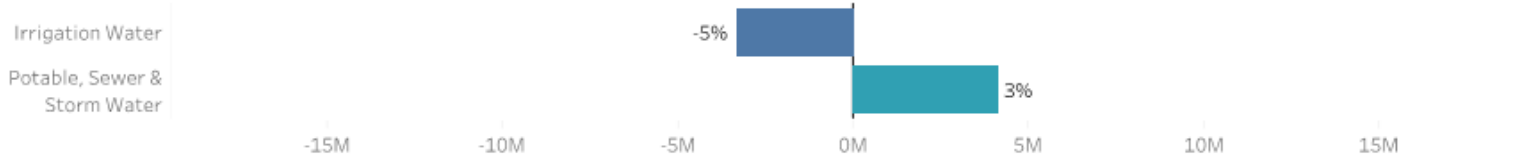
Water and Refuse Performance Change Compared To Last Year

- Irrigation Water
- Potable, Sewer & Storm
- Refuse

Effective Rate



Consumption



Cost



Refuse



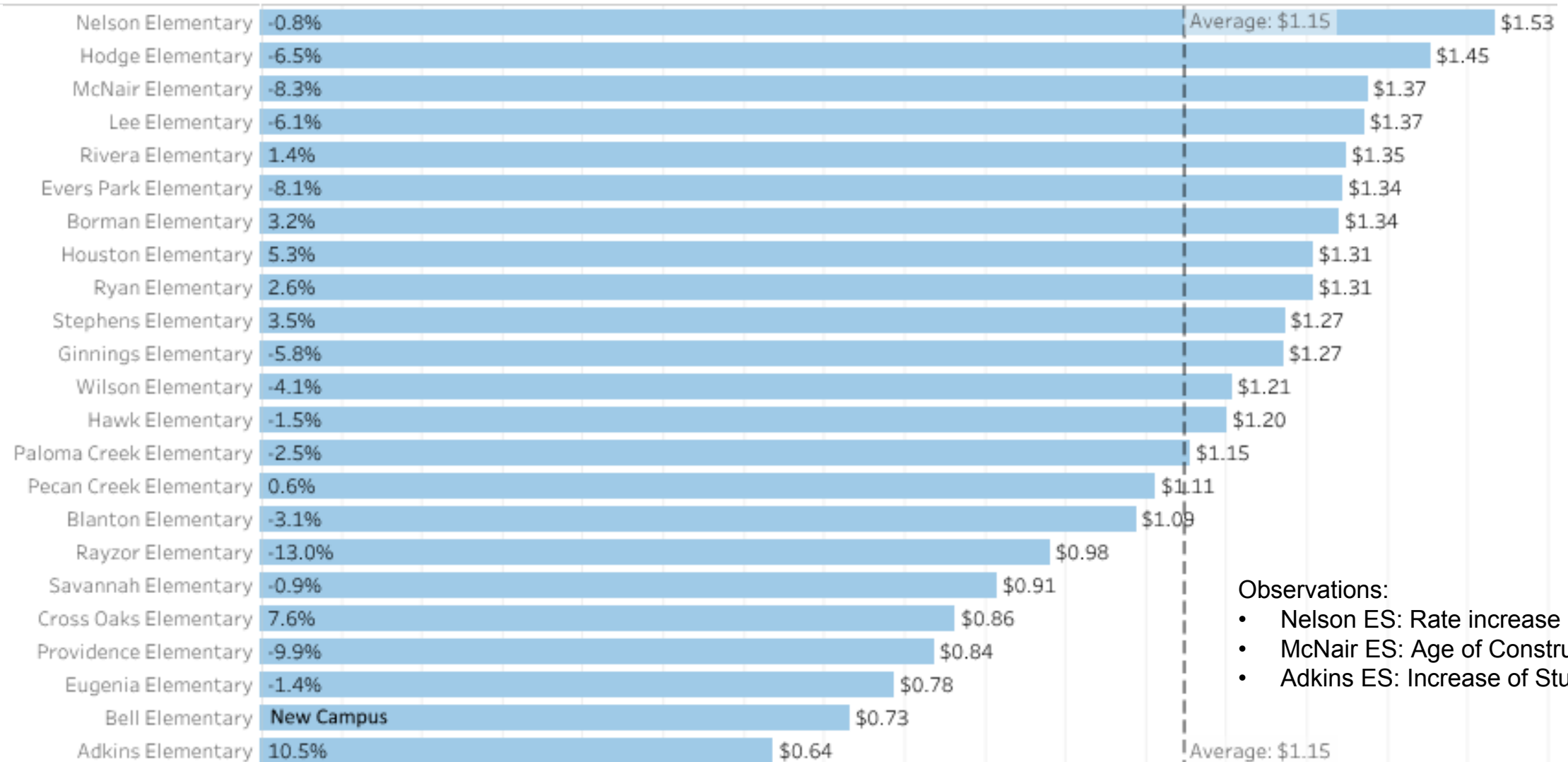
Total Cost Comparison By Utility

Comparison by Utility

| | FY 2015-2016 | FY 2016-2017 | % Change | Cost Change (\$) |
|---------------------------------|--------------------|--------------------|-----------|------------------|
| Electric | \$5,364,889 | \$5,789,205 | 8% | \$424,317 |
| Gas | \$317,632 | \$364,376 | 15% | \$46,744 |
| Irrigation Water | \$415,100 | \$427,004 | 3% | \$11,904 |
| Potable, Sewer & Storm Water | \$936,265 | \$995,740 | 6% | \$59,475 |
| Refuse | \$876,516 | \$787,321 | -10.18% | (\$89,195) |
| Total | \$7,910,402 | \$8,160,957 | 3% | \$250,556 |

Elementary School Gas & Electrical Cost per Square

Elementary Schools: Cost per SqFT & Usage Percent Change From Previous Year - Electric & Gas

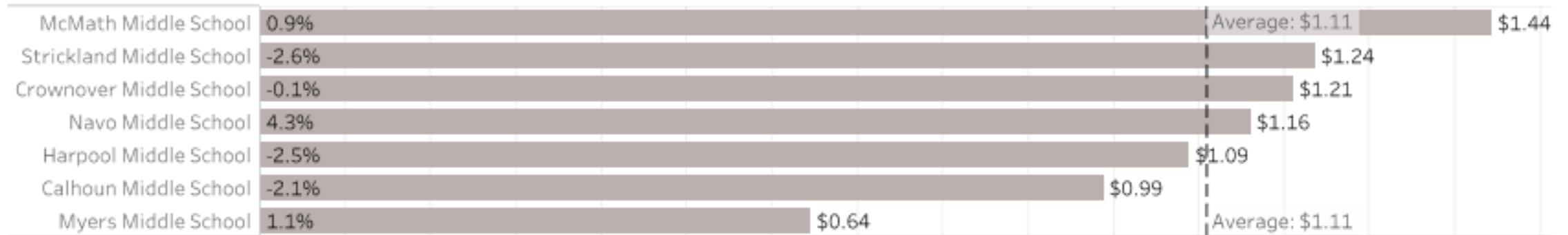


Observations:

- Nelson ES: Rate increase
- McNair ES: Age of Construction
- Adkins ES: Increase of Students

Middle School Gas & Electrical Cost per Square Foot

Middle Schools: Cost per SqFT & Usage Percent Change From Previous Year - Electric & Gas



Observations:

- McMath MS: Summer camp & City use of facility
- Navo MS: Increase of Students

High School Gas & Electrical Cost per Square Foot

High Schools: Cost per SqFT & Usage Percent Change From Previous Year - Electric & Gas

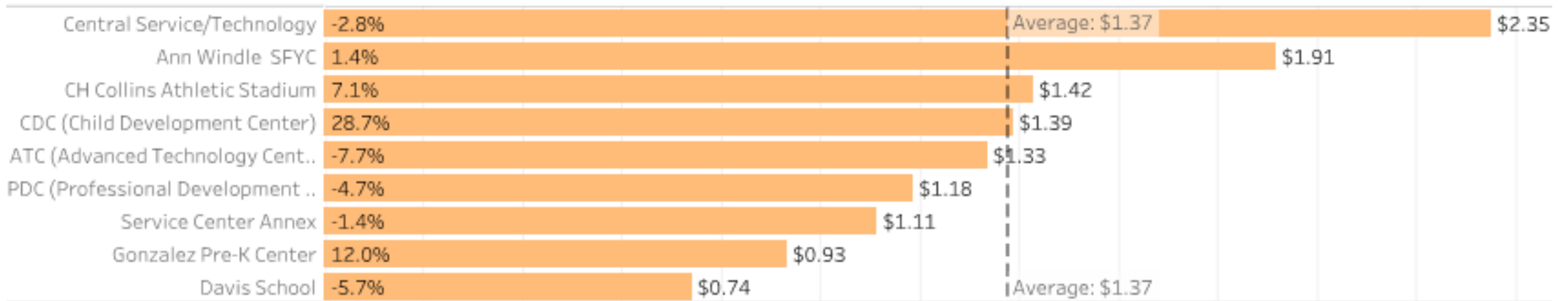


Observations:

- Fred Moore HS: Additional use of facility
- Braswell HS: New construction & equipment prove to be more efficient

Other Buildings Gas & Electrical Cost per Square Foot

Other: Cost per SqFT & Usage Percent Change From Previous Year - Electric & Gas

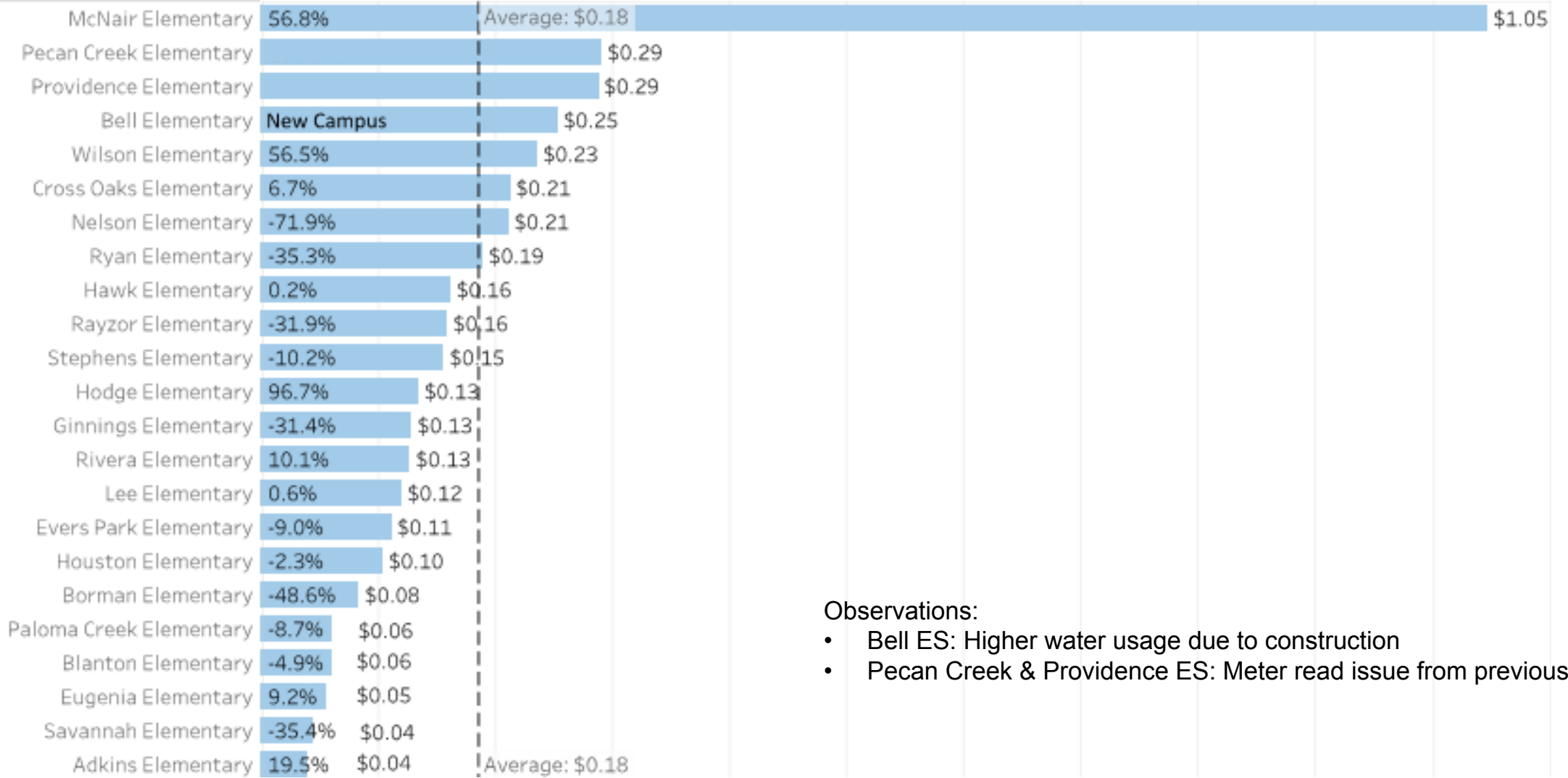


Observations:

- Central Service: Includes Data Center and additional facilities.
- Gonzalez Pre-K: Increase of Students
- CDC: Increase of Students

Elementary School Water Cost per Square Foot

Elementary Schools: Cost per SqFT & Usage Percent Change From Previous Year - Water

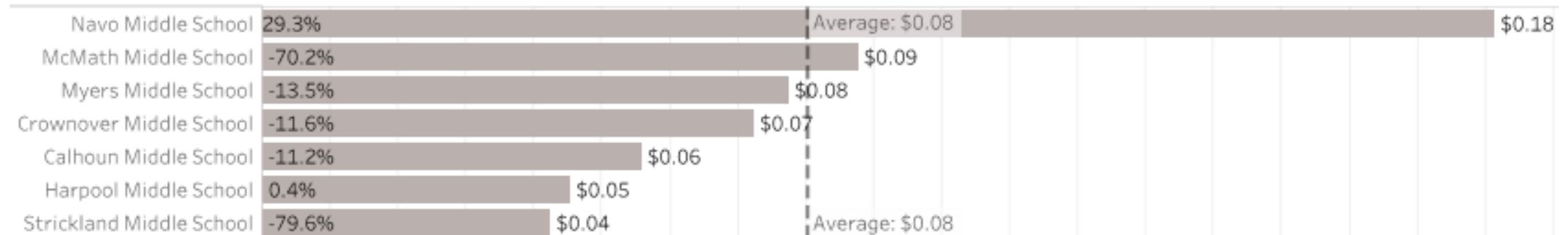


Observations:

- Bell ES: Higher water usage due to construction
- Pecan Creek & Providence ES: Meter read issue from previous year

Middle School Water Cost per Square Foot

Middle Schools: Cost per SqFT & Usage Percent Change From Previous Year - Water

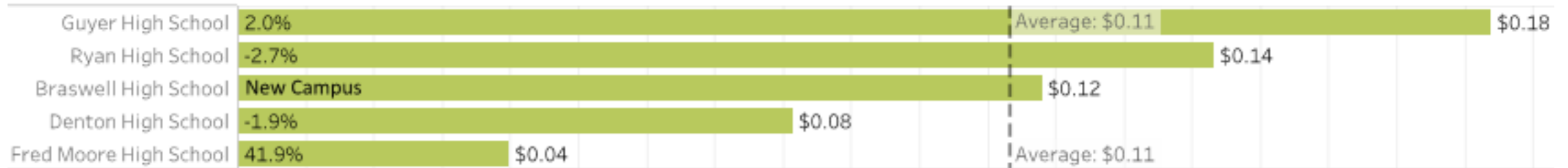


Observations:

- Navo MS: Increase of Students and Bus facility

High School Water Cost per Square Foot

High Schools: Cost per SqFT & Usage Percent Change From Previous Year - Water

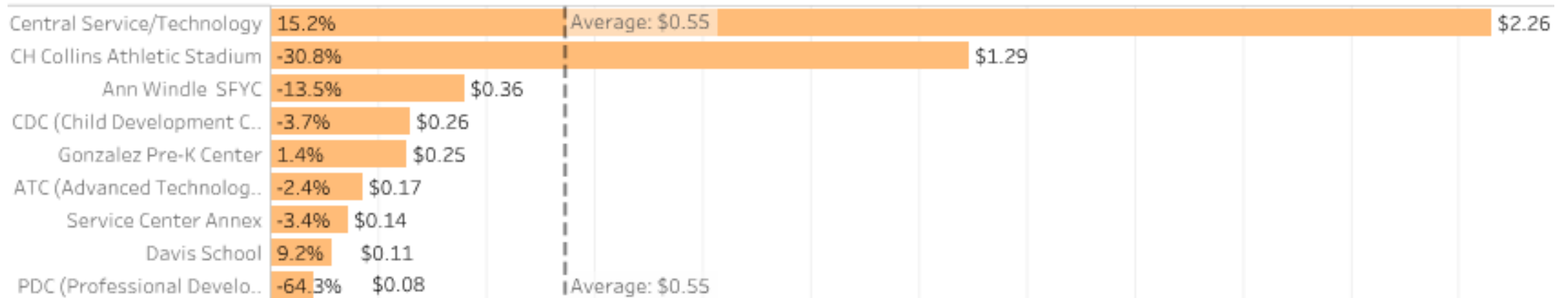


Observations:

- Fred Moore HS: Additional use of Facility
- Braswell HS: Higher water usage due to construction

Other Buildings Water Cost per Square Foot

Other: Cost per SqFT & Usage Percent Change From Previous Year - Water



Observations:

- Central Service: Includes additional drainage costs



Recent Accomplishments

- Major water leaks discovered and repaired at McNair and Wilson Elementary Schools
- Implementing Smart Irrigation at 30 locations
- Approved Solar for Elementary #24
- Denton Municipal Utilities agreed and has separated domestic and irrigation in accounts that have separate meters.
- Present audit reports three months closer to audit period
- Geothermal simple energy payback – 21 Years
 - Using Myers MS (Geothermal) and Harpool MS (Base)



Looking Ahead

- Issue RFP for outdoor lighting retrofit contained in 2013 Bond Program
 - \$50,718 in annual electric savings
 - \$20,000 one time rebate
- Develop RFP for replacement of large Chillers at Ryan High School contained in 2013 Bond
 - Energy savings and rebates TBD
- Investigate/Walk-through audit of:
 - Ann Windle SFYC