



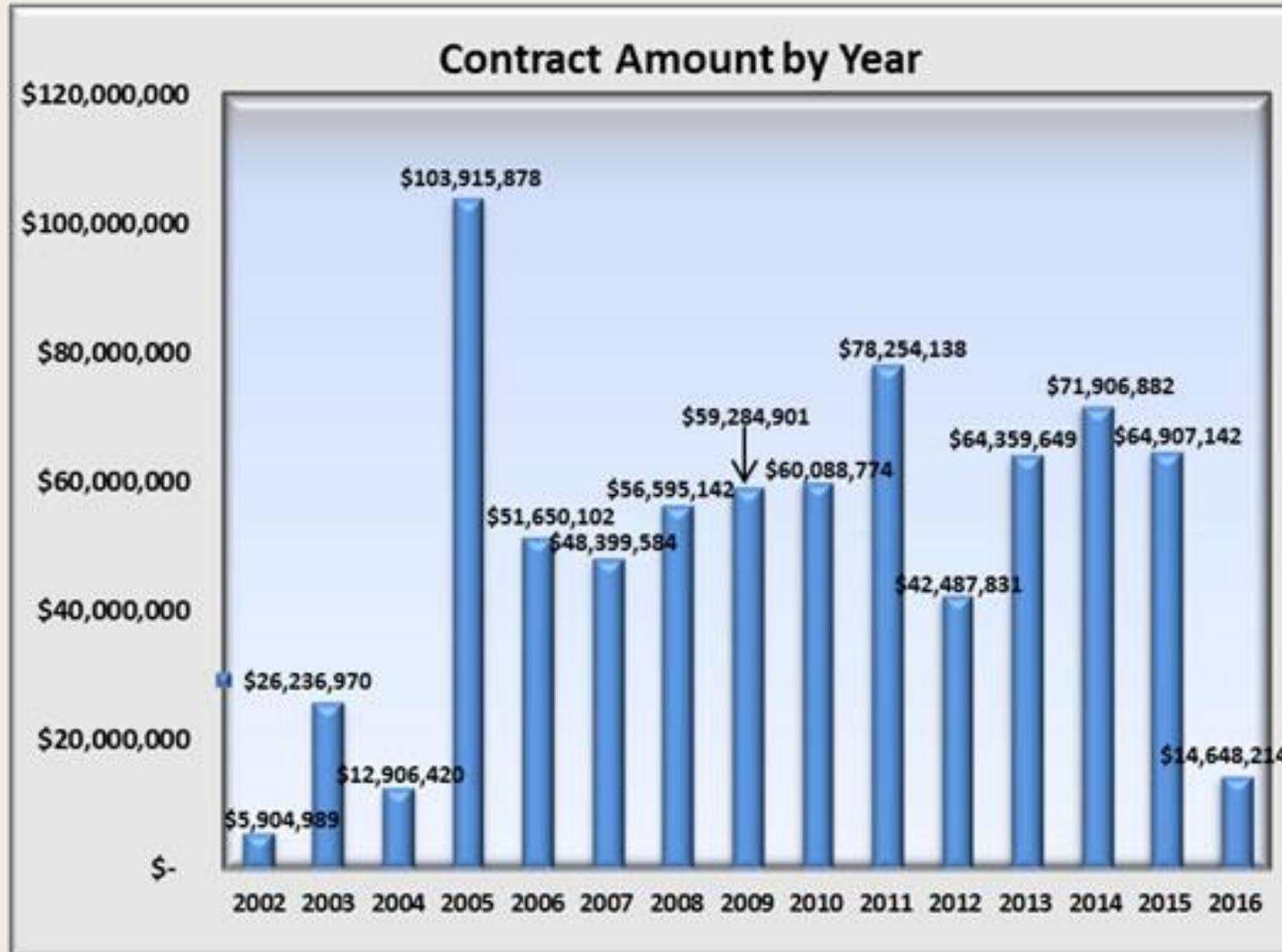
# ENERGY PERFORMANCE CONTRACTS FOR LED<sub>s</sub> AND HIGH-EFFICIENCY WATER FIXTURES

Albemarle County Public Schools  
VEEP Workshop 12/6/2017

# Energy Performance Contracts

- Virginia Department of Mines, Minerals and Energy pre-approves energy services companies (ESCOs) to serve all public bodies in Virginia that use the state performance contract.
- Any state agency may enter into an energy performance-based contract with an energy performance contractor to significantly reduce energy costs of a state facility through one or more energy conservation or operational efficiency measures.
- An energy performance contract (EPC) is an agreement between an ESCO and a customer to perform as a condition of payment. Performance in this context means meeting a guaranteed level of energy savings.

# Performance Contracting in Virginia



# ESCO Process

- Invite pre-approved ESCOs to prepare a back-of-the-envelope audit (no \$)
- Evaluate proposals and recommended Energy Conservation Measures (no \$)
- Select ESCO to move forward with an Investment Grade Audit (\$)
- Secure financing
- Implement project

# Energy Performance Contract

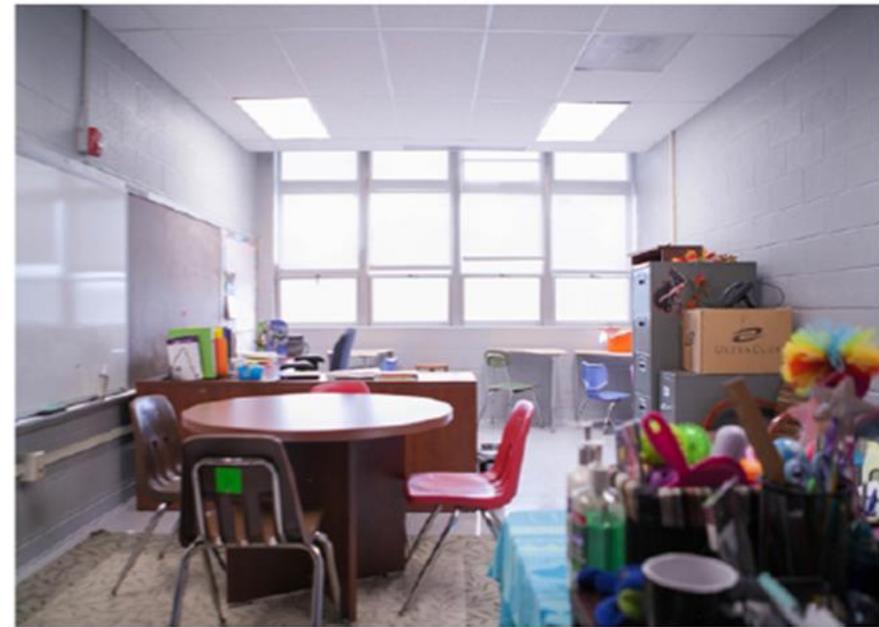
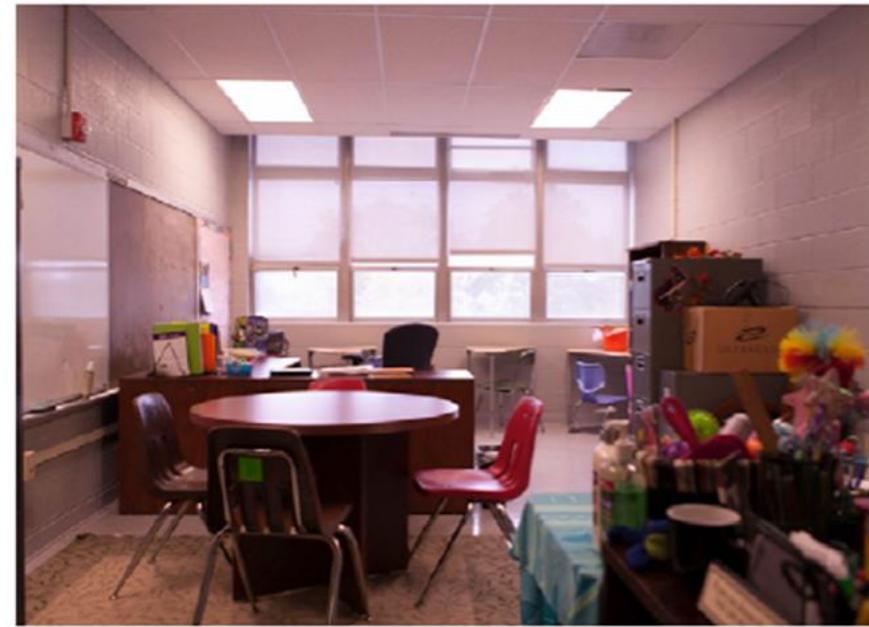
## Benefits

- Guaranteed energy savings
- Loan repaid from utility savings
- ESCO designs and builds

## Considerations

- Continued measurement & verification
- Baseline adjustments for other construction changes since audit
- Effects on basic assumptions (e.g., changes in community usage)

# Why?



- Ability to dim lighting
- No flickering and consistent color temperature
- Less headaches/migraines
- Helps students with sensory issues
- Students seem calmer and more attentive



The **General** setting provides cool, crisp light ideal for collaboration.



The **Reading** setting offers relaxing, warmer light for personal focus tasks.



The **Testing** setting is a neutral, non-distracting color temperature.



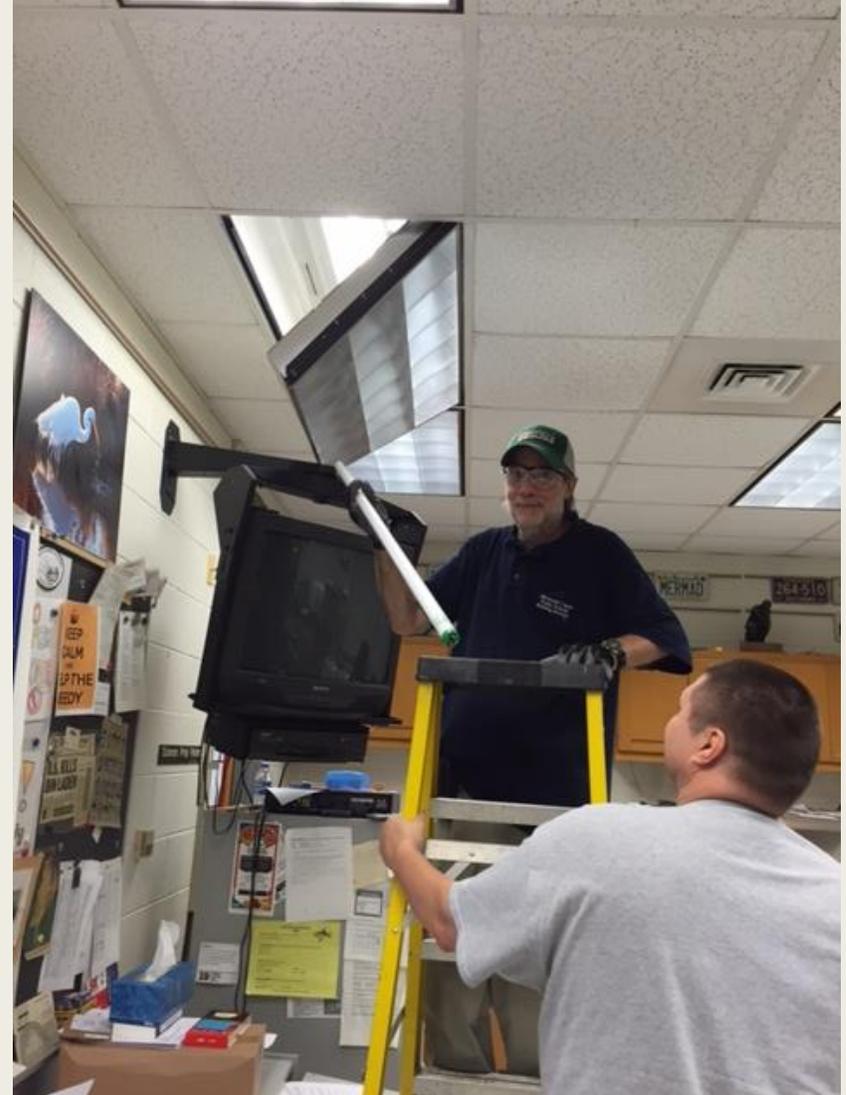
The **Energy** setting is cooler, refreshing light to help combat afternoon fatigue.



Lighting and Circadian Rhythm. Image courtesy of USAI lighting

# Additional LED Benefits

- No mercury in fixtures
- No fluorescent bulbs to recycle
- Reduced maintenance needs
- Uniform color temperature in spaces

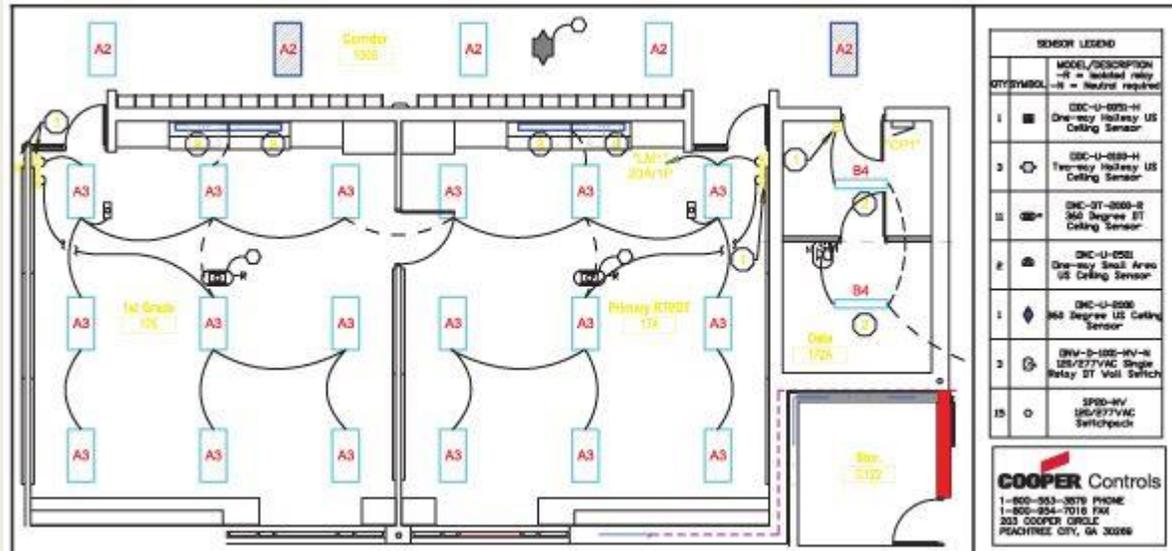


# Project Details

- Focus – LED lighting in classrooms + controls
- Expanded scope to include high-efficiency plumbing fixtures, exterior lighting, and other interior lighting
- 22 schools
- 12-year payback on cumulative projects

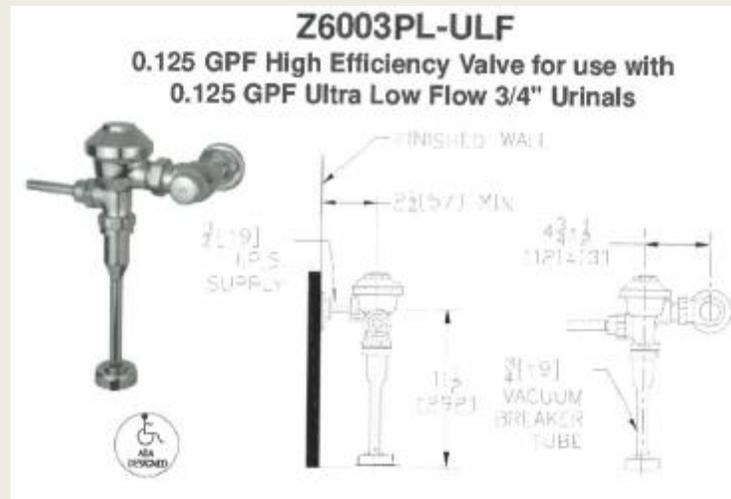
# Lighting Fixtures & Controls

- Pilot rooms for color temperature and switching selection
- Retrofit kits, tubes in mechanical spaces/hallways



# High-Efficiency Plumbing Fixtures

- Urinals
- Fixtures avoid “ghosting”
- Toilets



# Detailed Project Timeline

- 2015: ACPS LED Lighting Pilot in 12 classrooms and feedback from teachers and students
- [January 14, 2016](#): School Board learned about the LED lighting pilot benefits and the possibility of using an energy performance contract
- [January 28, 2016](#): School Board voted to support the request for a Back-of-the-Envelope Audit for a division-wide LED lighting project
- August 2016: Back-of-the-Envelope Audit request sent to ESCOs
- September 30, 2016: Back-of-the-Envelope Audits received from ESCOs
- April – May 2017: MOU finalized with Ameresco and Investment Grade Audits
- May – June 2017: Pro Forma for proposed projects finalized and meetings with Local Government on financing mechanisms
- August 10, 2017: Financing RFP results presented to School Board
- September 14, 2017: Decision to proceed
- November 2017: Construction Begins

# Financing

## Tax-Exempt Equipment Lease Financing

- Option 1A: Equipment Lease Purchase Agreement with the County Board & School Board only as the Lessee;
- Option 1B: Equipment Lease Purchase Agreement with the School Board only as the Lessee;

## Taxable Qualified Energy Conservation Bond (“QECB”) via the Virginia Saves Green Community Program (“VA Saves”)

- Option 2A: A QECB issued via the Virginia Resources Authority (“VRA”) with the County and School Board as the Lessee.
- Option 2B: A QECB issued via the Virginia Small Business Financing Authority (“VSBFA”) with the School Board only as the Lessee.



# Project Implementation

- 12-month construction timeline
- Work hours: 5 PM – 3 AM
- Construction started on Monday!

# Annual Reduction Impact



3,700 tons of CO<sub>2</sub>



6,000,000 kWh



7 million gallons

# Resources

DMME Performance Contracting Information:

<https://www.dmme.virginia.gov/DE/PerformanceContractingSupport.shtml>

Lindsay Snoddy – Albemarle County Public Schools

[icsnoddy@k12albemarle.org](mailto:icsnoddy@k12albemarle.org)

(434) 975-9340