Manassas City Public Schools

Small public school district addresses aging infrastructure without tapping capital budget



Performance Contract guarantees savings to offset costs

An hour west of our nation's capital, the Manassas City Public School district (MCPS) serves nearly 8,000 students and offers nationally acclaimed arts programs, Career Technical Education and the region's only integrated math and science curriculum.

When Andy Hawkins joined the district as Executive Director of Finance and Operations, one of his first initiatives was to conduct an assessment of the eight MCPS school buildings. His goal was to compare the per-square-foot cost of running the facilities against industry standards, and to take steps, as needed, to increase efficiency and reduce costs.

Following the facilities review, Hawkins and his team began making a 'concerted effort' to upgrade the district's buildings and infrastructure, though their work would have to be spread across 10 years of capital improvement funding.

"So we simultaneously began to investigate the use of performance contracting, which I'd had some experience with in a previous position," said Hawkins. "I thought it might be a way to get these multimillion dollar projects done in a shorter period of time while freeing up capital money that we already budgeted to do other things."

Location:

Manassas City Public Schools Manassas, VA

Enrollment: 7,613

Project Scope:

- · Lighting upgrades
- Water upgrades
- Building envelope improvements
- Building automation system upgrades
- · Air handling units

Results:

- Implementation Costs: \$7,134,050
- Guaranteed Savings: \$8,710,169 over 15 years



"If I had spent every dime of our capital improvement funding for the next two or three years, I could not have gotten these projects done. Instead, through the performance contract and its guaranteed savings, we're able to pay for the improvements through our normal operating budget, and leverage our capital improvement dollars to enhance the learning environment."

Andy Hawkins, Executive Director of Finance and Operations
Manassas City Public Schools

Performance contracting: The no-capital-needed option

Performance contracting is a funding mechanism that allows school administrators to implement much-needed facility improvements without a capital expense. Instead, energy and operational savings are guaranteed to offset the project costs over a specified period of time.

Johnson Controls has been managing performance contracts for decades, and was selected by MCPS to conduct a more thorough evaluation of the district's facilities, recommend improvements and execute a plan that ultimately included:

- Lighting upgrades (to higher efficiency fixtures) and occupancy sensors
- Water upgrades including tank top and flush valve upgrades, and low-flow aerators
- Building envelope improvements including sealing roof/wall intersections, foam insulation and weather stripping
- · Building automation system upgrades in four buildings
- Boiler combustion controls to reduce fuel consumption by adjusting the burner run pattern to match the system's heating demand
- · Air handling unit replacements/upgrades in two facilities
- Bipolar ionization to reduce outside air ventilation requirements (and costs) by providing cleaner air.

The project was completed in early 2019 with promising initial results. Installation-period savings totaled nearly \$165,000-more than double the savings guaranteed in the performance contract.

"I'm encouraged by it," said Hawkins. "It couldn't have worked out better."

Moving forward, the cost savings guaranteed by the performance contract will total more than \$8.7 million over 15 years.

"Contracts like this are sometimes the only way smaller districts can stay on top of their facilities," said Whit Blake, Johnson Controls Strategic Account Sales Manager. "They often have limited staff and limited funding which means they're more likely to be putting out fires than being proactive about maintenance. And as a result, their facilities may not be operating as efficiently as they could be."

Beyond the operational savings associated with the facilities upgrades and guaranteed in the performance contract, the initiatives combine to deliver added benefits to MCPS and its community.

 An improved learning environment: Studies have shown that when steps are taken to modernize facilities, students and teachers are more satisfied, absenteeism from illness may be reduced, and students' academic performance improves.^{1, 2, 3}

"We've gotten a lot of positive comments from staff and students, especially where there's a noticeable difference, such as with the improved lighting," said Hawkins. "Indoor air quality is also a big contributor to student engagement and performance. And while the students may not see the difference, we believe the inclusion of bipolar ionization will significantly reduce harmful particulates, VOCs, allergens, mold, odors, bacteria and viruses."

- Reduced energy use and emissions: The project is expected to have a positive impact on the environment, with reduced emissions that are equivalent to:
 - The amount of electricity used to power 138 homes each year
 - The greenhouse gas emitted by driving an average passenger car 1.9 million miles

"While reducing our carbon footprint wasn't a primary driver in this initiative, it is a wonderful benefit," said Hawkins. "It's icing on the cake."



 Increased awareness: The facilities improvement project creates a perfect learning opportunity for both students and staff.

"We partnered with MCPS to introduce an energy awareness curriculum, and distributed books to teachers of sixth grade science," said Blake. "We even installed a solar learning lab where students can go outside at a picnic table and charge their cell phones and read about the benefits of renewable energy."

Performance contracting projects like the one at MCPS are one way schools can achieve the sometimes-competing goals of addressing infrastructures while delivering mandated learning objectives and providing a safe, secure and healthy learning environment—all within budget constraints.

"Performance contracting is still, for some, a relatively new thing and people are a little suspicious of the guarantees," said Hawkins. "But we're making it happen. Maybe we can become a small incubator here in Manassas to show our peers that it can be done. I'm very proud of our facilities. I'll put them up against any of the larger school districts in our area."

Notes:

- ¹ (Basch, 2011; Centers for Disease Control and Prevention, 2009a; La Salle & Sanetti, 2016; Michael et al., 2015). https://forhealth.org/Harvard.Schools_For_Health. Foundations_for_Student_Success.pdf
- ² http://www.perkinseastman.com/white_papers
- 3 https://www.ncbi.nlm.nih.gov/pubmed/23506393

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