Making an

IMPACT

Phase 1B Program

ECC Upgrades | October 2024

FLORENCE 3 SCHOOL DISTRICT
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Strategic Infrastructure Partnership Overview

Goals

- Address critical deferred maintenance needs while modernizing existing facilities to positively impact **ACADEMICS**, the **ARTS**, and **ATHLETICS**

- Leverage expertise from a long-term partner that delivers quality solutions

- Improve operational efficiency through new technologies, equipment standardization, and ongoing support and training

- Increase community and student awareness through strategic marketing and robust scholar engagement


Phase 1B Overview
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Proposed Project Phasing

Phase 1A

Early Childhood Center | ESSER priorities | In construction

- Building envelope enhancements
- Roofing repairs for long-term performance

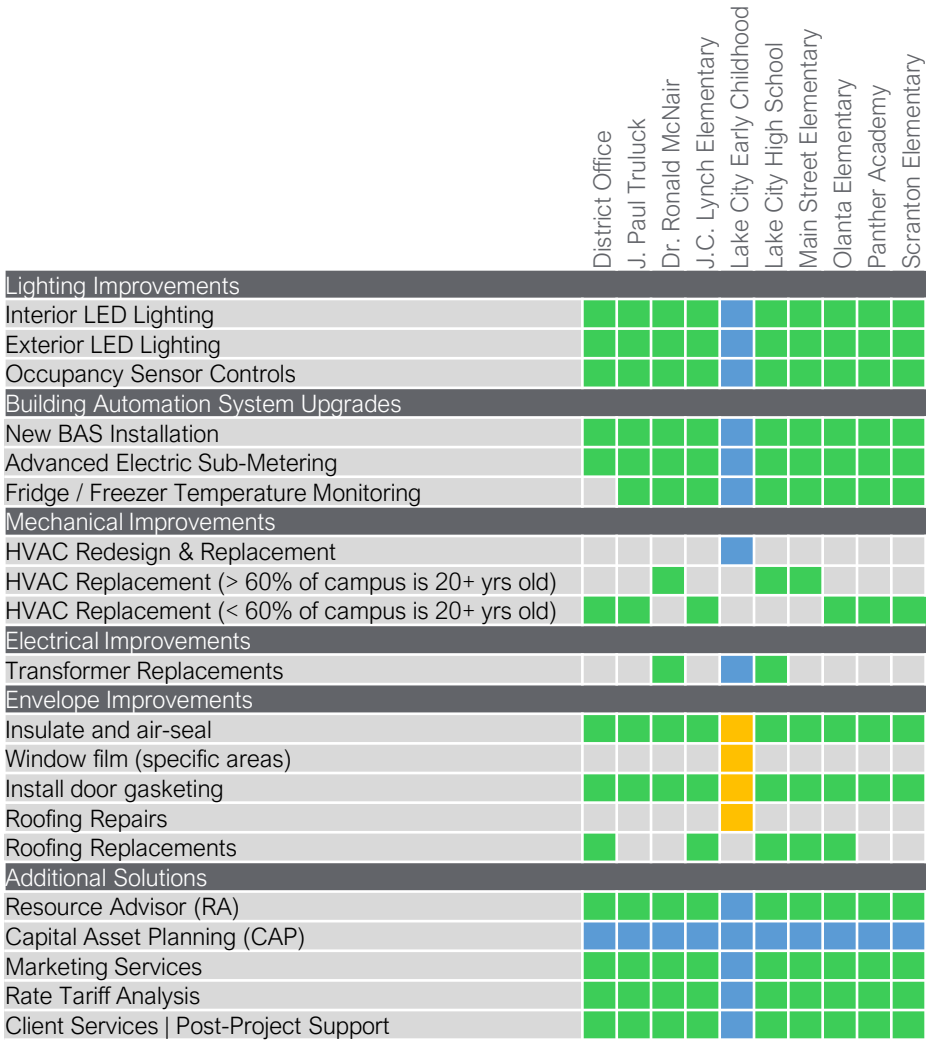
Phase 1B

Early Childhood Center | Remaining Critical Updates

- HVAC redesign and replacements
- Building Automation System
- LED Lighting

Additional Phases

District-wide Energy and Infrastructure Modernizations



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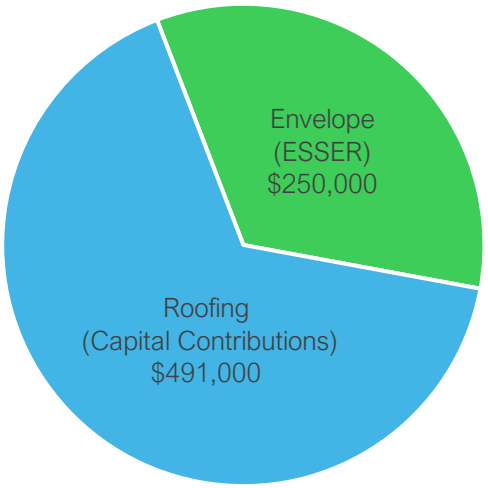
Program Value Overview

Phase 1A

$741K

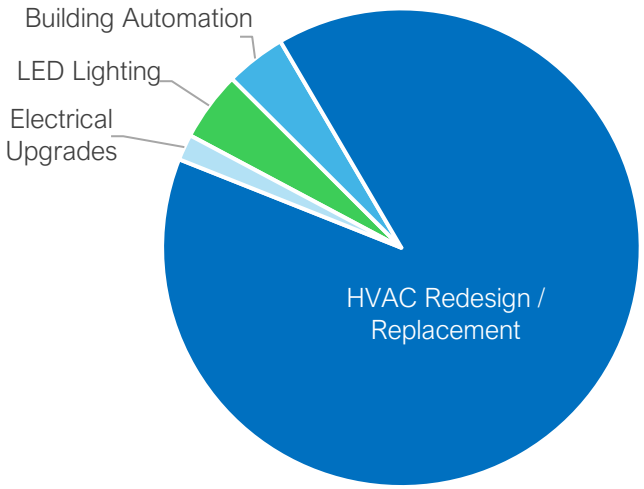
Total Project



Phase 1B

$5.828M

Total Project Cost



Considerations

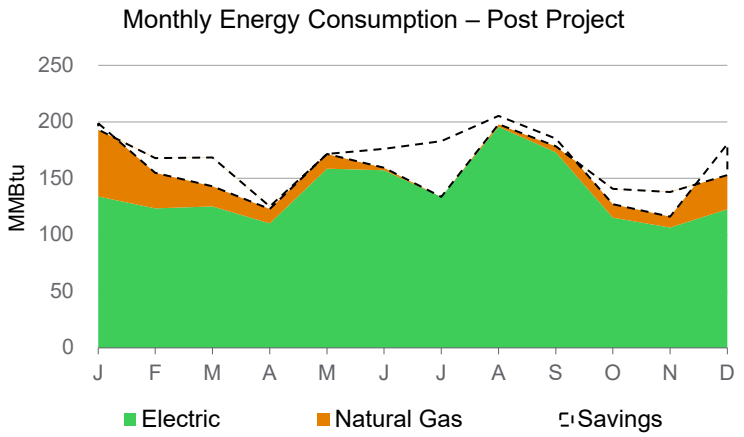
Strategically tackling district-wide projects to advance mission-critical infrastructure initiatives in a comprehensive, turnkey approach

Efficiency – Maximize utility and operational budgets and re-invest guaranteed savings

Modernization – Implement new technology and equipment for comfortable and productive learning environments

Excellence – Optimize facilities and proactively position FSD3 to be best positioned for the future

Utility Analysis | Phase 1B



Annual Energy Baseline Summary - Per Site

	Energy Baseline			Cost Baseline		
Site	Electric	Natural Gas	Total	Electric	Natural Gas	Total
Name	*kWh*	*Therm*	*MMBtu*	*$*	*$*	*$*
Lake City Early Childhood Center (	575,340	0	1,964	$86,161	$327	$86,487
Total	**575,340**	**0**	**1,964**	**$86,161**	**$327**	**$86,487**

Annual Energy Savings Summary - Per Site

	Energy Savings			Cost Savings		
Site	Electric	Natural Gas	Total	Electric	Natural Gas	Total
Name	*kWh*	*Therm*	*MMBtu*	*$*	*$*	*$*
Lake City Early Childhood Center (	94,531	-2,639	59	$17,647	-$3,433	$14,214
Total	**94,531**	**-2,639**	**59**	**$17,647**	**-$3,433**	**$14,214**
Percent Savings	***16.4%***		***3.0%***	***20.5%***		***16.4%***

Budget Impact

$86,487
Baseline Energy Spend

$14,214
Projected Phase 1A & 1B Energy Savings

+

$1,028
Operations and Maintenance Savings

$408K+
Total Phase 1A & 1B Savings throughout Partnership

20-year Financial Guarantee

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Available Funding Options

Maximize your ROI through a combination of various funding sources

Utility Rebates

Capture Duke Utility rebates associated with energy efficiency upgrades.

- Phase 1A: **$5,852** (Window film and insulation)
- Phase 1B: **$17,100** estimated (Lighting and HVAC)

Tax Incentives

179-D Tax Credit

Up to $5 per square foot renovated with energy efficiency improvements

Grant Support

- EPA Community Change Grant
- COPS School Violence Prevention Act
- USDA Distance Learning and Telemedicine Grant
- School Based Mental Health Grant
- US Economic Development Authority

ACQ Financing – Equipment Lease

Borrow the upfront cost for renovations and repay debt with any available funds

Capital Improvement Plan

Align specific scopes with planned capital investment through the CIP. Bundled project could be partially or entirely funded through this model depending on available capital.


Phase 1B Solutions
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LED Lighting

Current Conditions

Existing Lighting is predominately (93%) 32-watt T8 lamps with electronic ballasts. A small portion (7%) of the school, around the exterior of the building and in exit signs, is LED lighting. Egress lighting is lacking in some areas. Additionally, there are no occupancy sensors currently and the central lighting control panel is malfunctioning and obsolete.

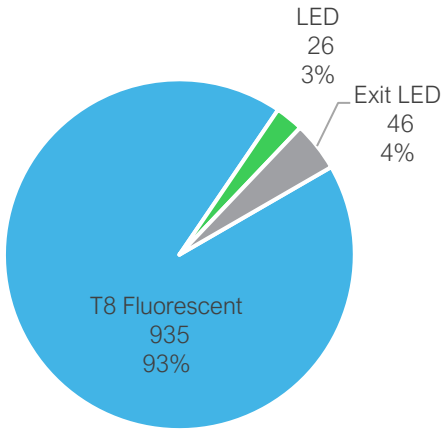
Current Challenges

- Gradual LED replacement leads to prolonged non-uniformity in lighting system, color temperature, and performance
- Old central control panel often leaves lighting on when building is unoccupied, causing unnecessary increase in energy costs and shortening lifespan
- Maintenance burden of short lifespan of bulbs and ballasts

T8 Fluorescent Lighting – PE Room

T8 Fluorescent Lighting – Classroom E6

Existing Lighting by Type



Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

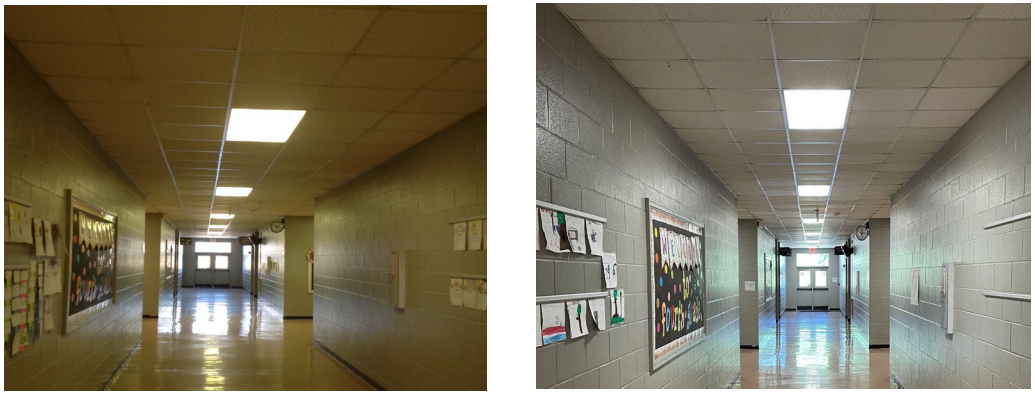
LED Lighting

Proposed Solution

- Retrofit all T12 and T8 lighting with LED tube retrofits for more uniform and efficient lighting
- Install occupancy sensors throughout
- Replace central lighting control panel with basic scheduling device to avoid unnecessary usage
- Update emergency egress fixtures where needed to meet OSF requirements

Benefits

- Significant energy savings
- Long life, resulting in fewer burnouts and greatly reduced maintenance
- Improved consistency and light levels for learning environment
- Simplified stock for facilities team



Example: Before (Left) and After (Right) of another Lighting Retrofit

Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	**Lake City Early Childhood**	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

Building Automation

Current Conditions & Challenges

HVAC systems at the ECC are controlled by a combination of Ecobee Wi-Fi thermostats and manual thermostats – some examples are displayed in the images to the right. There are central control panels in electrical rooms and the attic for Ecobee and fire smoke damper relays. There is currently limited capability for remote access and scheduling because of the large quantity of units. This can cause challenges to maintain occupant comfort and continue with efficient operations. Also, there is no monitoring of walk-in freezers and coolers, which means that district staff are required to physically go to campus during breaks and power outages to check on food supply.

Ecobee Wi-Fi Thermostat
Room E9

Manual Thermostat
Kitchen Pantry

Ecobee Central Control Panel
Attic

Paragon Time Clock
Control Room

Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

Building Automation

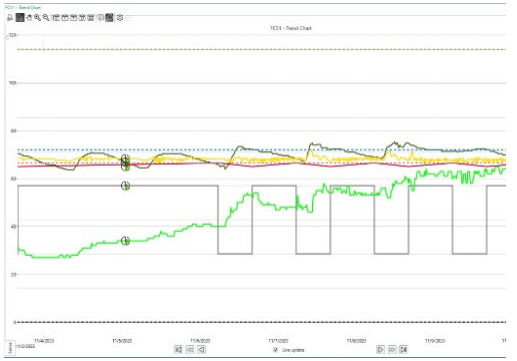
Proposed Solution

Install a single Building Automation System (BAS) that will be expanded to the other school sites in later phases for uniformity, ease of use, as well as freezer/cooler monitors and alarms

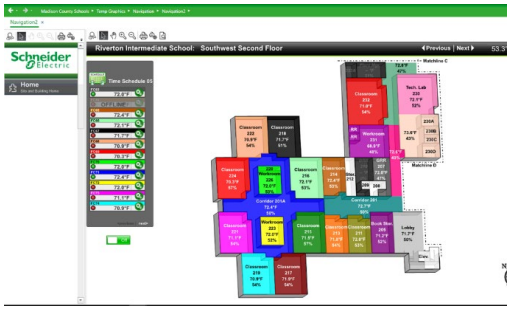
Benefits

- Easier to respond to unexpected events requiring HVAC
- Schedule school functions ahead of time
- Monitor humidity levels and space temperatures during unoccupied times
- Monitor walk-in cooler/freezers and alarms
- Troubleshoot comfort complaints remotely before sending technicians on site
- Enable facilities team to manage facilities more efficiently with new, uniform technology

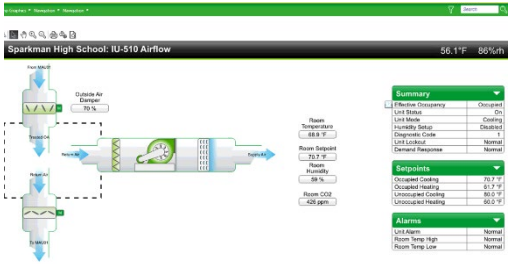
Thermal Map



Trending Capabilities



Floor Plan Zoning



AHU System View

Locations included in this scope:

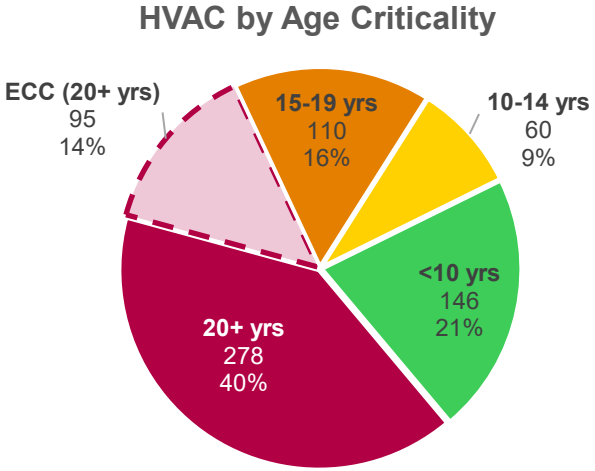
District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

HVAC Upgrades

Current Conditions & Challenges

Most of the HVAC systems at the ECC are original to the building, and at 28-years old are far beyond their useful life. Existing PTAC units cannot dehumidify effectively, and there is no ability to control humidity to provide a comfortable learning environment. No fresh air is being supplied to rooms, which can negatively impact the learning environment. Additionally, the building is negatively pressurized, which causes unconditioned outside air to infiltrate and strain the PTAC units.

1996 Condensing Unit



Outside Air Unit (1 of 2)

1996 PTAC Unit (typical of 82)

Locations included in this scope:

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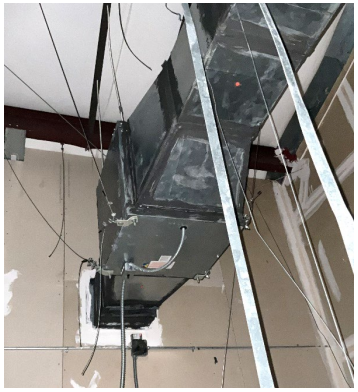
1996 Kitchen Wall Pack (1 of 2)



General Exhaust Fan

1996 Building E Mini Split

1999 Media Workroom Mini Split

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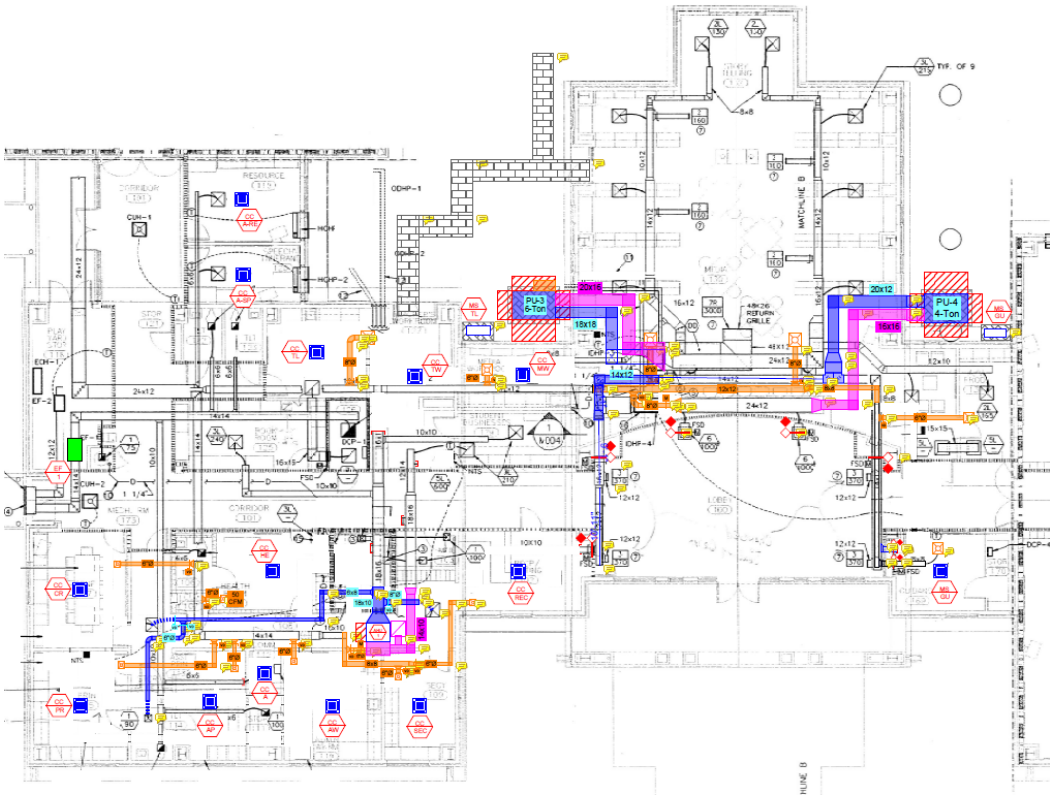
HVAC Upgrades

Proposed Engineered Solution

- Replace PTACs with mini splits
- Install new, simplified dedicated outside air systems (DOAS)
- Replace Media Center and Office split systems above ceiling with ground-mounted packaged units for easier/safer maintenance
- Install multi-split system for front office area to provide improved individual temperature control for staff
- Replace Kitchen wall packs and install new mini split for dry storage
- New mini split systems for Communications Rooms (Buildings A, C, and E)
- Install five new general exhaust fans and one new Art Room exhaust fan
- New mini splits are 208 Volts instead of current PTAC units that are 277 Volts
- Four (4) new outdoor pad-mounted transformers will be installed, as well as four new outdoor electrical panels, to provide power for the new 208 Volt equipment



Building A Ductwork Plan

Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

HVAC Upgrades

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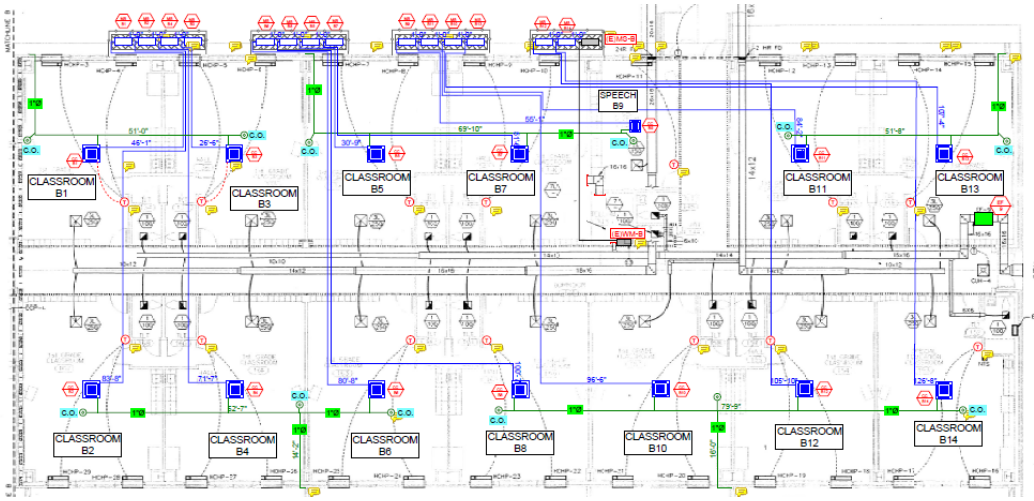


Building B HVAC Plan

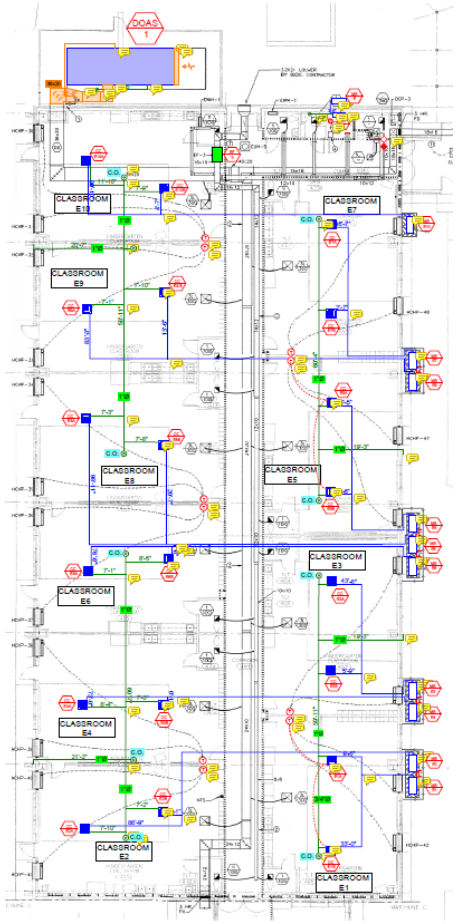
Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

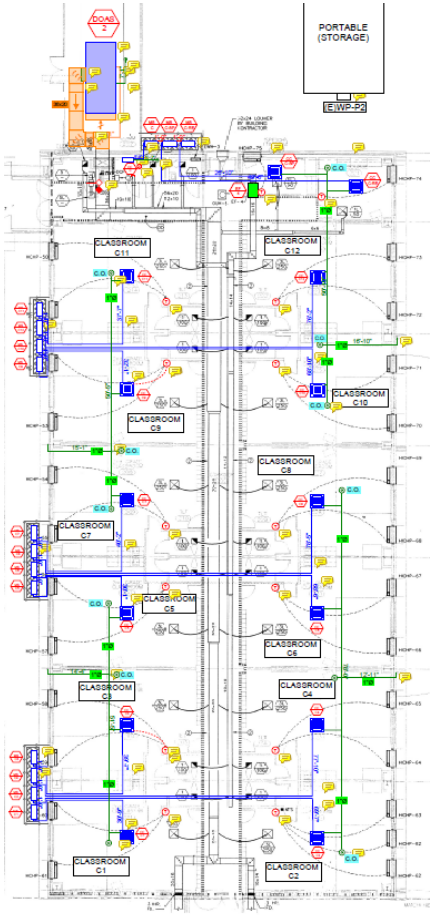
HVAC Upgrades

Benefits

- Mini-splits are less noisy than PTAC units
- Ceiling cassettes provide more even air distribution than PTAC units
- Improved comfort through more accurate temperature & humidity control
- Improved indoor air quality with proper ventilation
- Increased energy efficiency
- Reliable heating/cooling to avoid unexpected outages



Building E HVAC Plan



Building C HVAC Plan

Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

Electrical Upgrades

Current Conditions & Challenges

The ECC was built with 480 Volt infrastructure and has transformers located throughout the building. At 28 years old, these transformers are near the end of their useful life and pose a risk for unplanned outages. Older transformers put out a lot of heat, are not energy efficient, and can be noisy.

Proposed Solution

Replace aging low-voltage transformers with new, more efficient units

- 5 of 6 transformers identified for replacement
    - 1 transformer cannot be replaced due to space limitations and code compliance

Benefits

- Reduced heat load and noise
- Energy savings by limiting energy loss
- Reliability – avoid disruption of unplanned outages

Existing Transformers

Locations included in this scope:

District Office	J Paul Truluck	Dr. Ronald McNair	JC Lynch Elementary	Lake City Early Childhood	Lake City High School	Main Street Elementary	Olanta Elementary	Panther Academy	Scranton Elementary

Technologies and Ongoing Support

REMOTE MANAGEMENT

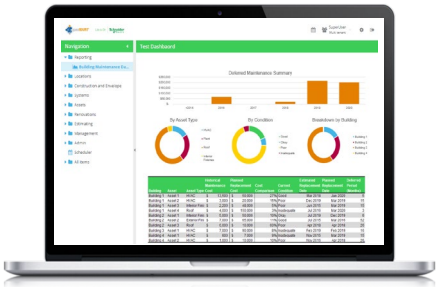
BUILDING AUTOMATION

Streamline building operations through an integrated, web-based HVAC and energy management system

PERFORMANCE REPORTING

RESOURCE ADVISOR

Real-time kW meters & energy reporting to track bottom-line cost reductions and flag inconsistencies throughout partnership



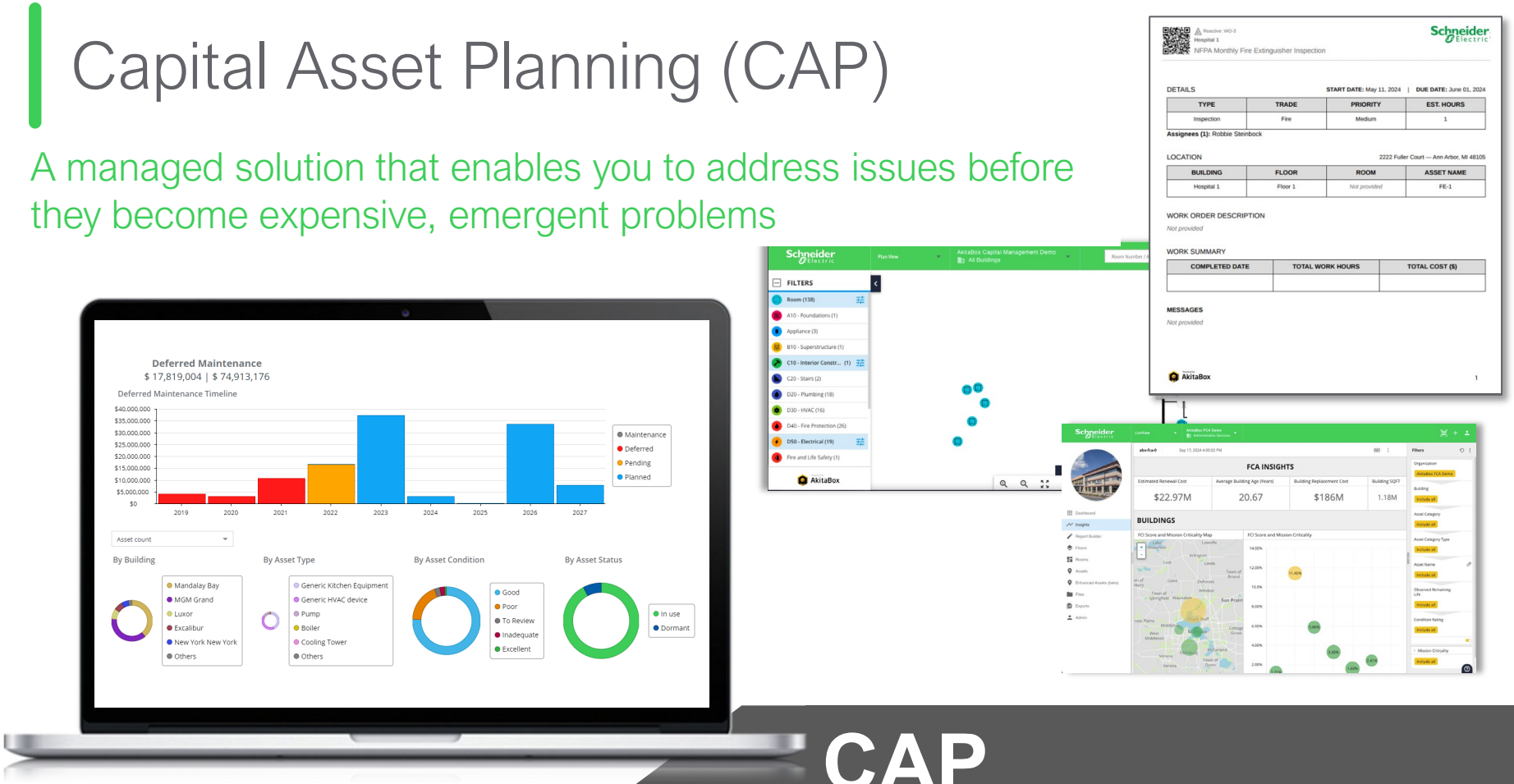
ADDITIONAL OFFERINGS

CLIENT SERVICES

Our Client Services team within Schneider Electric offers flexible and robust support including 24/7 technical help, warranty management, project documentation, record drawings, on-site trainings, and more, that FSD3 will benefit from

Capital Asset Planning (CAP)

A managed solution that enables you to address issues before they become expensive, emergent problems



CAP

District-wide, up-to-date HVAC equipment inventory, including extensive data and photos, that enables management of condition, location, and costs associated with every asset that are used for lifecycle planning and budgeting, as well as maintenance history and work order management

Showcase the Initiative

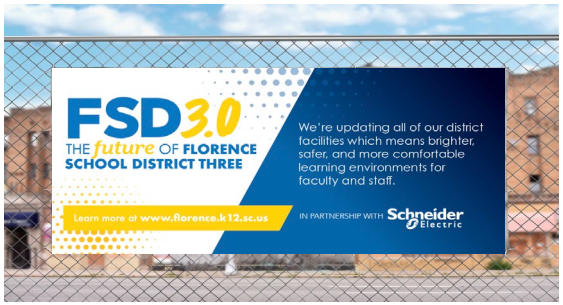
Our marketing team is collaborating with you to build out a customized marketing campaign centered around positioning FSD3 for success in showcasing progress throughout the district – helping to communicate improvements and bring visibility to upgrades.

SOCIAL MEDIA AND WEB

with live progress updates

SIGNAGE

to highlight modernizations to excite students and community | Signs, Banner Stands, Flyers



RE-BRANDING

the district to give a fresh look and feel to FSD3 and remind the community of Academics, Arts, and Athletics

FSD3.0

3.0 FSD3

THE future OF FLORENCE SCHOOL DISTRICT THREE

FSD3.0
THE future OF FLORENCE SCHOOL DISTRICT THREE

THE FUTURE OF FLORENCE SCHOOL DISTRICT 3.0

THE future OF FLORENCE SCHOOL DISTRICT 3.0

Simplify Outcome Achievement

Comprehensive Partnership

- Full Design & Engineering
- Energy assessment
- Utility modeling
- Tariff analysis
- Stamped Drawings
- Goal & Needs Alignment

- Onsight Supervision
- Subcontractor Mngt.
- Scope Oversight
- Solicitations
- Safety
- Permitting
- O&M Planning
- System Training

- Cash Flows
- Grants & Incentives
- CIP Alignment
- Debt Service Options

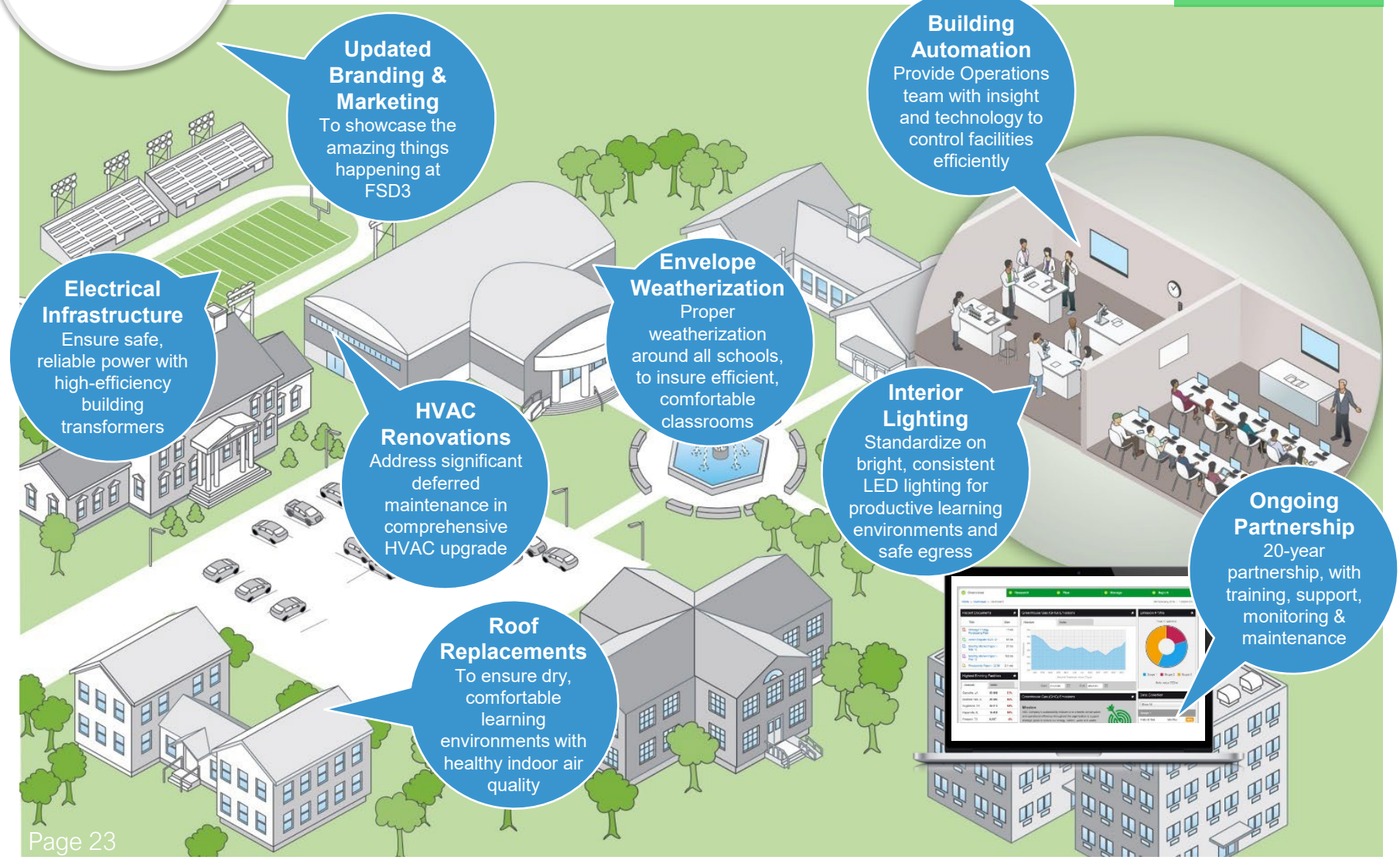
- Ongoing Training
- Troubleshooting
- Remote Monitoring
- Warranty
- BAS Management & Support

- Monthly Reporting
- Quarterly Reviews
- Yearly Reconciliation
- Resource Advisor
- Performance Based Outcomes

- Project Branding
- Marketing Services
- Telling the Good News
- Student & Community Engagement

Early Childhood Center Improvements

A multifaceted, multi-phased, infrastructure improvement program to modernize schools, bolster safety, drive efficiency & streamline operations



Partnership Roadmap

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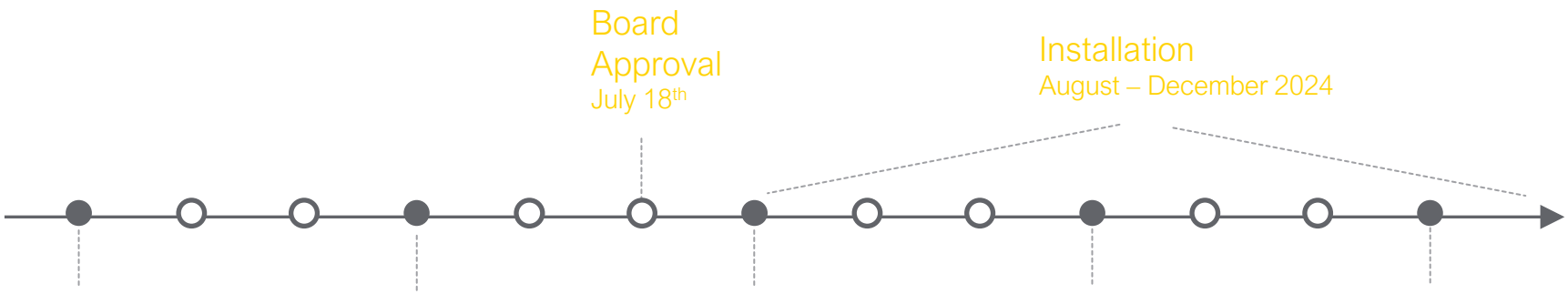
Partnership Roadmap and Next Steps

Phase 1A

Phase 1B



Site Surveys
March – April

Mechanical, Electrical, Energy, Automation, Lighting, Envelope, Automation, Roofing

30% Scope Review
May

Discuss survey findings, prioritize scope and establish budget to move forward to 60% design.

60% Scope Review
August

Review project scope and conceptual financials to ensure alignment before continuing to move toward construction-ready project.

Final Scope Review
Today

Final scope, savings, cost and funding method(s) – including grants. Work with District's staff to align initiatives with project scope.

Board Approval
October 17th

Present final project to the Administration and Board for approval. Finalizing construction plan and any incentives or financing.

Proposed Project Phasing

Phase 1A

Early Childhood Center | ESSER priorities | In construction

- Building envelope enhancements
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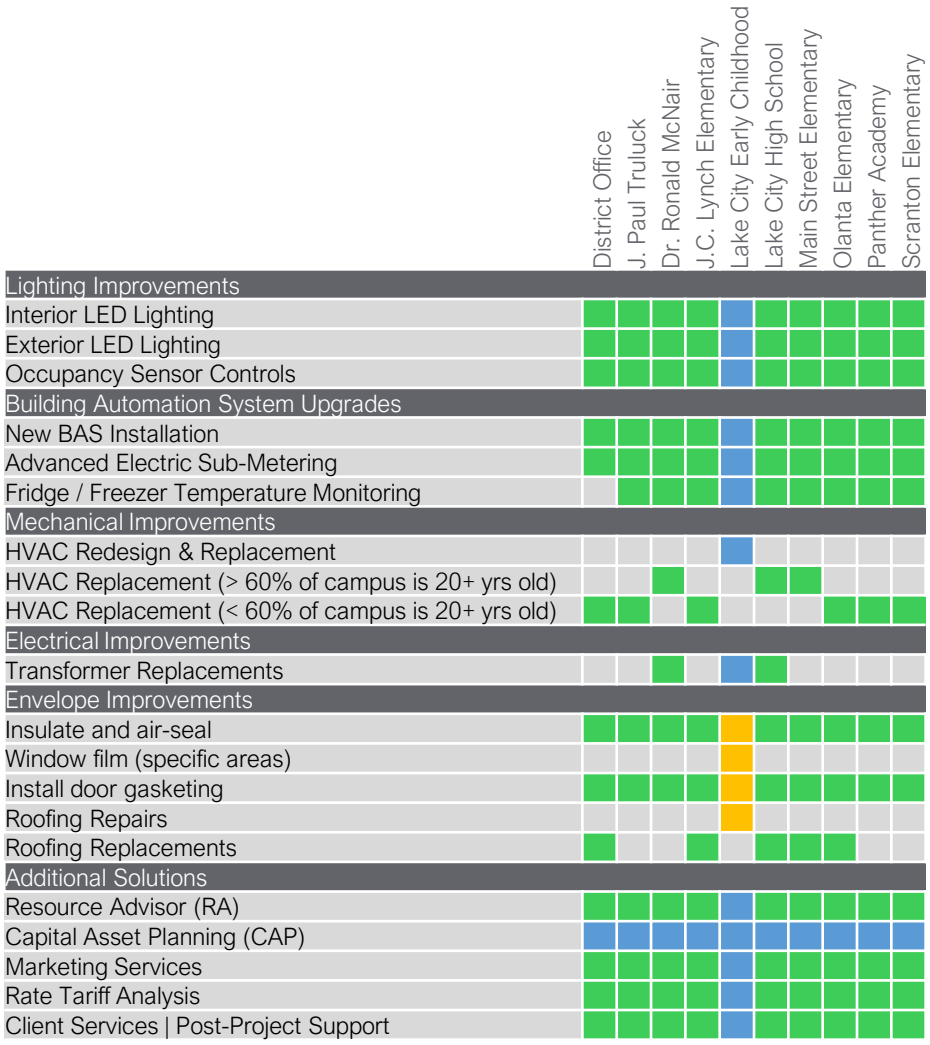

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