

# ALBEMARLE COUNTY PUBLIC SCHOOLS

Energy CLASS Prize – Phase II  
Submission



# Albemarle County Public Schools

Located in Albemarle County, VA surrounding the City of Charlottesville, Albemarle County Public Schools (ACPS) serves 14,000 students at 23 traditional schools and at other specialty centers. ACPS employs 2700 teachers and staff.

## Student Demographics by Racial & Ethnic Groups

- Asian - 6.3%
- Black - 11.7%
- Hispanic - 16.8%
- Multiple Races - 7.1%
- Native Hawaiian - 0.1%
- White - 58.0%

## Other Student Demographics

- Students with Disabilities - 13.1%
- Economically Disadvantaged – 30.4
- English Learners – 11.9%



# Utilization of Training & Coaching

ACPS took advantage of every opportunity to learn and grow, ensuring that at least one staff member (and often more) was present for each training and coaching session.



## Training Sessions

ACPS staff attended all training sessions and carefully considered how the knowledge gained can be applied at our buildings. We found the sessions on Fundamental Building Science, Benchmarking, and Indoor Air Quality to be particularly relevant.



## Coaching Sessions

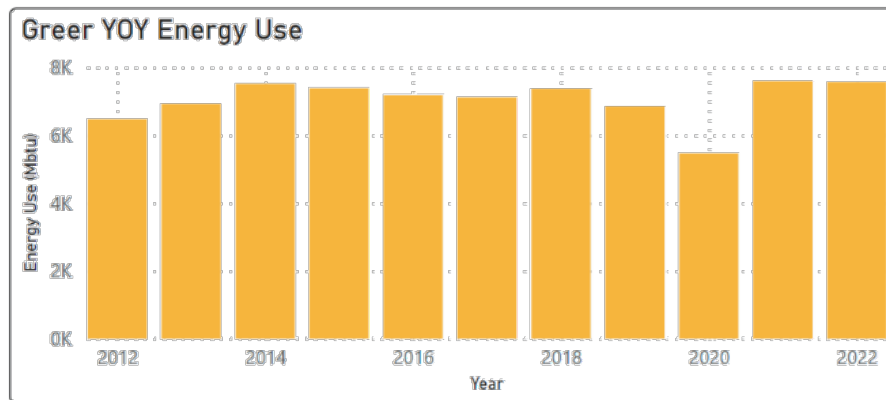
Our team worked closely with our coaching team to address specific energy management challenges that we are working to resolve. The NBI team coordinated a meeting with a HVAC expert at LBNL to troubleshoot challenges with humidity. They helped us set up the LBNL's BETTER tool to gain insights from our data, and they helped us draft language for our standards manual.

# Where ACPS was before Energy CLASS

When ACPS applied to phase 1 of the Energy CLASS Prize, **we were in an energy management plateau**. We had already implemented many of the low-hanging projects that we expected to result in energy usage reductions, like:

- Building Automation & Scheduling
- LED Lighting Upgrades
- HVAC Improvements
- 1 MW Solar PPA

But despite all of this, our year-over-year energy usage looked like this...



Year-over-year energy usage for Greer Elementary

... a plateau.

# What we have achieved during Phase 2



## Interns & Liaisons

ACPS's first cohort of three high-school interns helped to conduct energy audits, benchmark data, and develop scope for future projects

This year, we also launched the first cohort of Sustainability Liaisons. This stipend program is for teachers engaging in sustainable actions at their schools and with their students. Liaison projects include energy audits, recycling, and composting.



## Standards Manual

With the help of our NBI coaching team, ACPS added language to our standards manual to ensure that energy efficiency goals are incorporated into all projects. Updated sections cover daylighting, exterior lighting, lighting controls, building envelope, insulation, and material selection.



## Energy Benchmarking Improvements

ACPS updated production metrics and building data in ENERGY STAR portfolio manager to more accurately prioritize schools for energy efficiency upgrades.

With help from our NBI coaches, we imported ACPS data into LBNL's BETTER tool to gain analytical insights into which projects could optimize energy use at ACPS facilities.

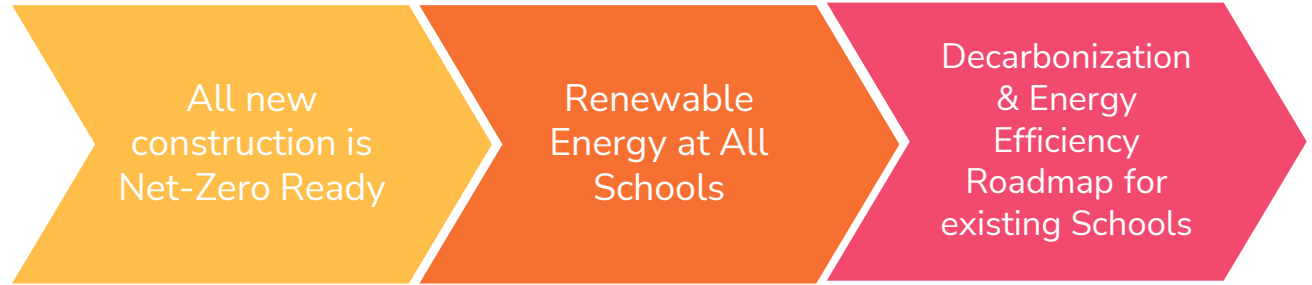


# Where we're going?

ACPS is committed to Achieving Carbon Neutrality by 2050 among ACPS's Building Portfolio. The following plan charts a course to achieving this goal through Energy Efficiency and Renewable Energy Projects.



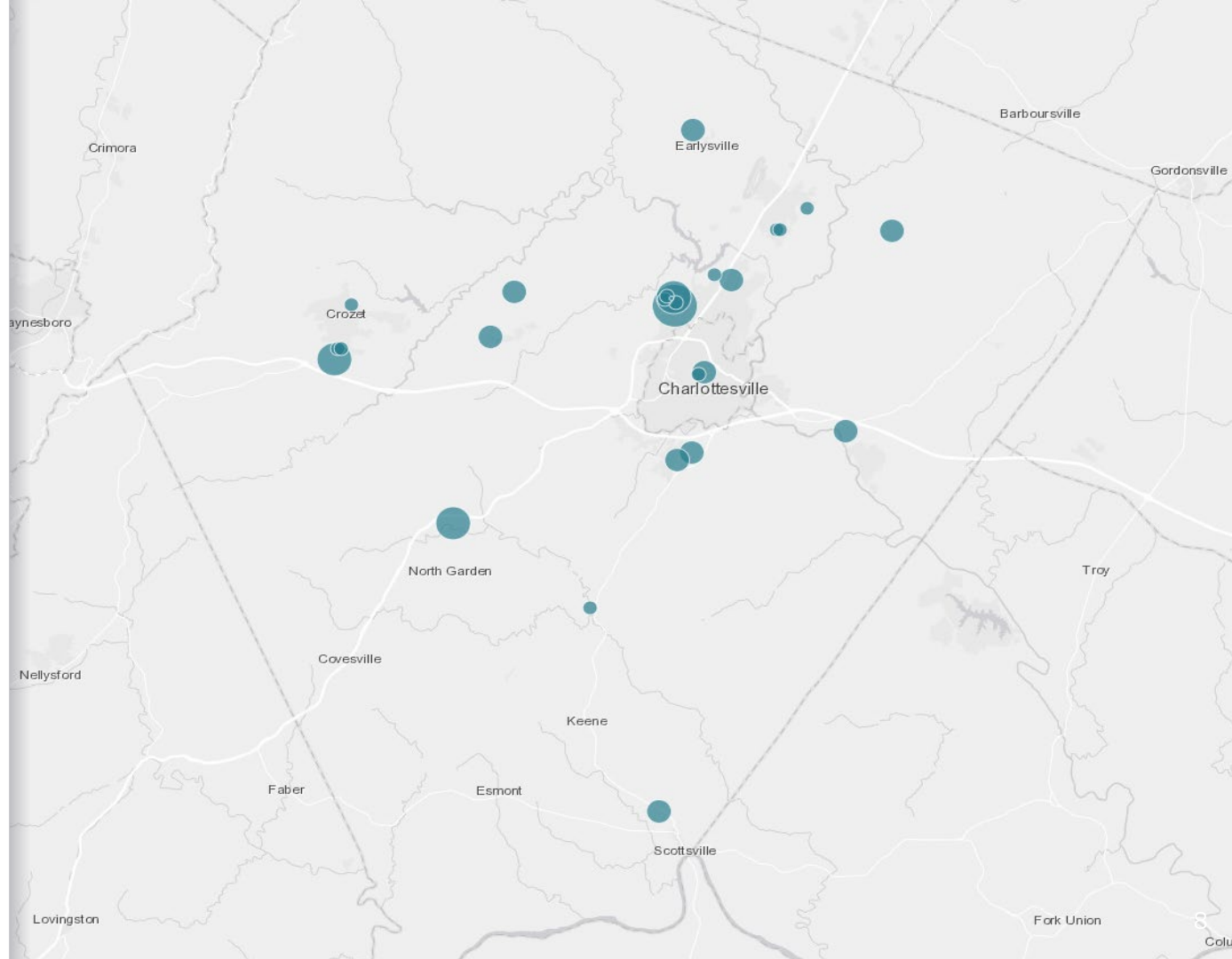
# How we're going to get there?



1. To ensure that new facilities do not move ACPS further from its 2050 carbon neutrality goal, all new facilities will be designed, constructed, and operated as net zero ready, needing only onsite renewable energy to become fully net-zero.
2. ACPS will install onsite renewable energy at all facilities using a variety of funding models.
3. ACPS will implement energy efficiency and decarbonization retrofits of major building mechanical and electrical facilities. To help prioritize and align projects to existing equipment replacement cycles, ACPS will work with a consultant to develop a facilities decarbonization master plan.

# Which Facilities will be Prioritized?

All ACPS owned schools will be included in the plan. Leased facilities and operations offices will not be included in the plan. Three planned new schools that are not yet constructed are included.







## All new construction is Net-Zero Ready

To ensure that new facilities do not move ACPS further from its 2050 carbon neutrality goal, all new facilities will be designed, constructed, and operated as net zero ready, needing only onsite renewable energy to become fully net-zero.

- School Board Policy implemented in 2023 dictates that all new construction and major renovation will be net-zero ready.
- ACPS is currently in the design phase of its first two net-zero ready schools which will be built in 2025/2026.
- A future school is planned to open in 2029 which will also be net-zero ready. ACPS staff will apply lessons learned from the previous projects and Energy CLASS trainings.



## Renewable Energy at All Schools

ACPS will install onsite renewable energy at all facilities using a variety of funding models aiming to add renewable.

- Develop term purchasing contracts with solar developers for both self-owned and power purchase agreement models, so that additional projects can be developed without the need for a new procurement process.
- Install a total of 4.5 MW of solar across 10 facilities through a Power Purchase Agreement ownership model, beginning in 2024 on all roofs that are less than 5 years old.
- Align solar installation with the district's roof replacement program so that solar is installed as roofs are replaced.

# Decarbonization & Energy Efficiency Roadmap for existing Schools

A Decarbonization & Energy Efficiency master plan will chart the course forwards for ACPS to electrify all building operations, identify energy efficiency opportunities, and plan for EV charging.

This process will:

- Align proposed upgrades with existing equipment replacement cycles leveraging equipment replacement budgets with external funding sources to maximize efficiency of new systems. For example, upgrading a fuel oil boiler to a geothermal heat pump system.
- Evaluate the capacity of existing electrical infrastructure compared to future electrical capacity needs associated with electrification of fossil fuel systems, EV charging, and future renewable energy and battery storage. Recommend upgrades, where needed, ahead of electrification of other equipment in that facility.
- Identify, recommend, and prioritize opportunities for energy efficiency upgrades across ACPS's building portfolio. Opportunities for efficiency may include building envelope upgrades, lighting & HVAC controls, retrocommissioning, etc.



# Thank you very much for your time.

If you have any questions about this document  
please don't hesitate to contact us at:

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