Dear Prince George's County Board of Education

My name is Joseph Jakuta and I am a volunteer with the Sierra Club Climate Parents campaign. I reside in Prince George's County in Mount Rainier, MD, where I have for 10 years and have lived in Prince George's County for 17 years. I am a parent of a rising kindergarten child at Robert Goddard Montessori School and will have a second child there soon.

I want to thank you for the opportunity to provide testimony about the FY2021 Educational Facilities Master Plan (EFMP), which will then be used to develop the annual and six-year Capital Improvement Plans (CIP). It is important for these short- and long-term capital decisions to consider the environmental health of the students in an equitable fashion, the long term climate impact and resilience, and ways to improve the financial well being of the school system.

Improvements to Heating Ventilation and Air Conditioning (HVAC) systems must be given high priority when it comes to long term capital improvements. This needs to focus on converting any heating systems that rely on oil or gas to electric and replacement of ventilation systems with Dedicated Outdoor Air Systems (DOAS). Secondarily, investments should be made on other energy saving and electrification measures. These can be done holistically and will lead to better educational outcomes, cost savings, and a safer learning experience.

I know upfront costs related to HVAC upgrades can be daunting, especially given current budget constraints. But there are options available to help achieve savings with lower upfront costs to the school system. Energy Service Companies (ESCOs) are companies that set up a public private partnership with organizations, such as schools, to audit and monitor energy use and perform retrofits and upgrades allowing the organization to amortize the costs of the projects overtime while saving money on reduced energy costs. For example, Hillsborough County Schools in Florida, a district slightly larger than Prince George's County partnered with two companies to invest $200 million dollars in energy improvements that over time are expected to save the school district $850 million dollars.[1]

Besides the potential for financial savings these improvements are DOAS are needed for the health of the student body . DOAS units bring fresh outside air into interior spaces independently from heating or cooling efforts. Addressing ventilation and air conditioning separately can save fan energy while improving indoor air quality.[2] Specifically these systems:

- Improve indoor air quality by removing contaminants from outdoor air and increasing fresh air, which has been found to be correlated with improved test scores.[3,4,5]

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[1] https://www.prnewswire.com/news-releases/minimise-usa-and-generate-capital-deliver-1-7-million-to-hillsborough-county-public-schools-300761722.html
[2] http://www.energymanagertoday.com/doas-a-new-approach-to-hvac-0124935/
[3] https://pubmed.ncbi.nlm.nih.gov/21029182/
[4] https://www.vox.com/2020/1/8/21051869/indoor-air-pollution-student-achievement
[5] https://iaqscience.lbl.gov/sites/default/files/performance-2.pdf

- DOAS units are effective dehumidifiers, and they help prevent moisture-related problems like sick building syndrome and mold growth, which some evidence finds to be associated with neurological problems.[6]
- Decoupling ventilation from air heating and cooling can also lead to energy savings.[7]

These upgrades are also important to the climate. Despite the reductions in greenhouse gas emissions from decreased activity due to Covid, a new record level of atmospheric CO_2 concentrations was just recorded.[8] In order to face the climate emergency that we are in we need to stop producing emissions by 2050 according to international experts.[9] Upgrades and replacements going into the CIP will need to begin to limit emissions now if our schools will be emission free by 2050.

In the short term HVAC improvements are an additional step that is needed to reduce the spread of Covid-19. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is the organization with the greatest expertise on HVAC systems. In response to Covid-19 they released specific improvements that should be made to reduce the chances of the spread of Covid-19 from the standpoint of buildings, which Prince George's County should invest in. Some of the recommendations are as follows (more information is available at http://www.ashrae.org/technical-resources/resources):

- Increase outdoor air ventilation
- Disable demand-controlled ventilation (DCV)
- Further open minimum outdoor air dampers
- Improve central air filtration
- Keep systems running longer hours, if possible 24/7
- Use portable room air cleaners with HEPA filters.

There is also a need to prioritize roof repairs in the budget. DOAS are typically installed on roofs so a stable roof is needed and it makes more financial sense to have this work done prior to installation of new systems. Roofs with leaks can also add to mold and other causes of sick building syndrome that can affect the health and learning of students. Finally, roof repairs can be coupled with solar installations which can save schools in electricity costs, reduce greenhouse gas emissions, and allow for financing opportunities to make the roof repair economically feasible in the first place.

When it comes to new builds, all of these factors need to be considered as well. Starting over with a new building provides a lot of opportunities for energy savings, building health, and greenhouse gas reductions, but also has the potential to lock in decisions that impact the health of the students and the release of greenhouse gas emissions for far longer.

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[6] https://pubmed.ncbi.nlm.nih.gov/15259424/
[7] http://doas.psu.edu/KC_03_7_1.pdf
[8] https://www.washingtonpost.com/news/powerpost/paloma/the-energy-202/2020/06/05/the-energy-202-how-carbon-levels-hit-a-record-high-even-as-emissions-fell-during-coronavirus-pandemic/5ed91ba688e0fa32f82327d2
[9] https://www.ipcc.ch/sr15/

This ask is also only one step. In the long term Prince George's County should commit to 100% Clean Energy Schools. There are similar health and economic benefits from electric buses, electric cooking equipment, and reducing food waste, among other areas, and a holistic look with the input from many stakeholders and from the perspective of equity is needed. In the long term the Board of Education should:

- Adopt a resolution setting a date to achieve 100% Clean Energy Schools.
- Institute a focus workgroup of government officials, community leaders, experts, staff, and students to Climate Change Action Plan to achieve 100% Clean Energy schools.

If you have any questions, do not hesitate to contact me. I can be reached at climateparentsPGMD@gmail.com or by phone at 512-203-4538.

Thank You,

Joseph Jakuta
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