

Memorandum

To Dr. Francisco Durán, Superintendent, Sunnc cupcnsDuic n [B3(D)-8.m 10.6 ()10.6 ()10.6 ()]JO Tc 4.8370.685 0

The Superintendent's Advisory Committee on Sustainability (SACS) is pleased to share with you some of Arlington Public Schools's sustainability highlights from the last year, including: 1) environmental performance; 2) Solar across our portfolio; 3) the Sustainability Liaison Program; and 4) Master Gardeners' involvement within APS.

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Please see the summaries below for additional details about APS sustainability and SACS. We look forward to working with you in the upcoming year to provide continued sustainability support for APS, including the review of adding a potential Energy Career Cluster at the new Arlington Career Center.

Environmental Performance

Energy

In Appendix B, both the site and source energy use intensity (EUI) can be observed for each school for the years 2021 through 2023, as well as 2019. The year 2020 was omitted as covid directly impacted performance. The year 2021 was also impacted but left in the graph for reference.

Site EUI refers to the amount of energy used per square foot annually. It's calculated by dividing the energy consumed by the building in a year by the total gross floor area. Like miles per gallon for cars, EUI is an important indicator of a building's energy performance.

Similarly, Source EUI refers to the amount of energy needed to power the building per square foot annually. However, it's calculated by dividing the total energy generated to power the building in a year by the total gross floor area. This includes not only the energy directly consumed by the building, but also the power lost across transmission lines on the grid, known as 'grid loss'.

We are proud to report energy use in FY23 for nearly every school was lower than FY22, as well as FY19. FY20 and FY21 were impacted by covid and therefore performance during those two years is not comparable. This decreased energy use is attributable to our teams' efforts both in school operations and maintenance, as well as the continued implementation of energy-saving projects.

Across the APS portfolio, both site and source EUI **decreased by 17%** from FY19 levels to FY23 and **decreased by 5%** in the past year from FY22 levels to FY23.

Across our portfolio in 2023, the average Site EUI for our schools was 53.0 kbtu/ft².

GHG Emissions

The Greenhouse Gas (GHG) Emissions Intensity is similar to EUI, where APS measures the amount of GHG emissions per square foot to normalize data across schools of various sizes. Following the energy pattern, GHG emissions were, in general, lower in FY23 compared to both FY19 and FY23.

Across the APS portfolio, GHG emissions intensity **decreased by 18%** from FY19 levels to FY23 and **decreased by 3%** in the past year from FY22 levels to FY23.

Total GHG emissions, measured in metric tonnes, decreased 16%, with 3,670 metric tonnes less emissions in FY23 compared to FY19. **That is equivalent to planting over 60,000 trees.**

Water

The Water Use Intensity (WUI) is similar to EUI, where APS measures the amount of water (in gallons) per square foot to normalize data across schools of various sizes. **WUI across the APS portfolio saw a 19% decrease from FY 19 to FY23**, thanks to water conservation efforts at the schools. In total, **APS saved over 10 million gallons of water in FY23 compared to FY19**. APS staff have noted a main contributor to the reduction in water use from FY19 was the repair of mechanical equipment, such as cooling towers. Leaks in mechanical equipment can result in large water loss, and APS staff have made efforts to amend and fix equipment over the years.

While APS saw a minor decrease of total water use from FY22 to FY23 (less than 1%), they did see a minor increase in WUI on average as some of our smaller schools used slightly more water (less than

2% more). This is a negligible fluctuation year-to-year, especially considering the good trend of lower

specific gardeners, known as Extension Master Gardener or EMG, and a teacher or dedicated contact within a school. The longest relationship is with Carlin Springs Elementary, dating from 2007, where EMGs support an after-school garden club for the students in extended day care. The general approach is a group of EMGs, usually one per four students, use a shared curriculum to conduct a classroom learning session indoors followed by outdoor hands-on experiences in the garden, weather permitting.

The shared curriculum is focused on gardening best management practices adjusted to age appropriateness of the children. The "curriculum" focuses on three concepts: building healthy soil; importance of native species; and growing your own food. We draw materials from a variety of resources including MGNV, Junior Master Gardener (JMG) handbooks, Kids Gardening and Homegrown National Parks. Quite a few of our EMGs have engaged in youth garden education training, such as online training with the JMG organization. Individual topics include a breakdown of the three concepts such as: composting, leave the leaves, the water cycle, native plants, invasive plants, pollinators, plant morphology, edible plant parts, plant parts, insects, trees, and vegetable gardening A-Z, with small group and large group discussions of each topic, as well their interrelationships. EMGs adjust the learning activities to the physical and learning readiness levels of the children, which ranges from Pre-Kindergarten through Middle School. However, currently, most of our groups are with elementary grade levels 3-5.

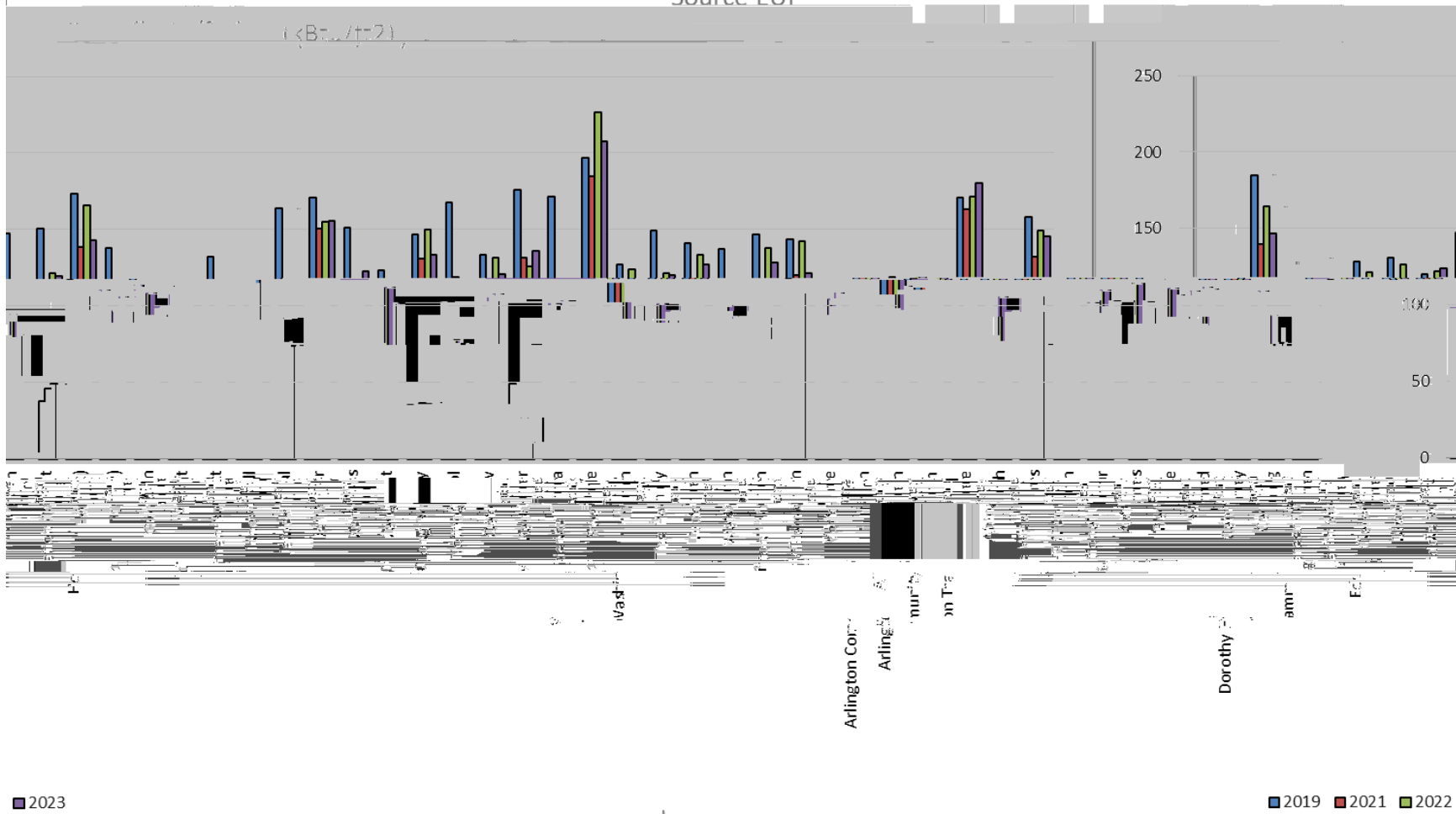
Appendix B: Energy, GHG Emissions, and Water Graphs



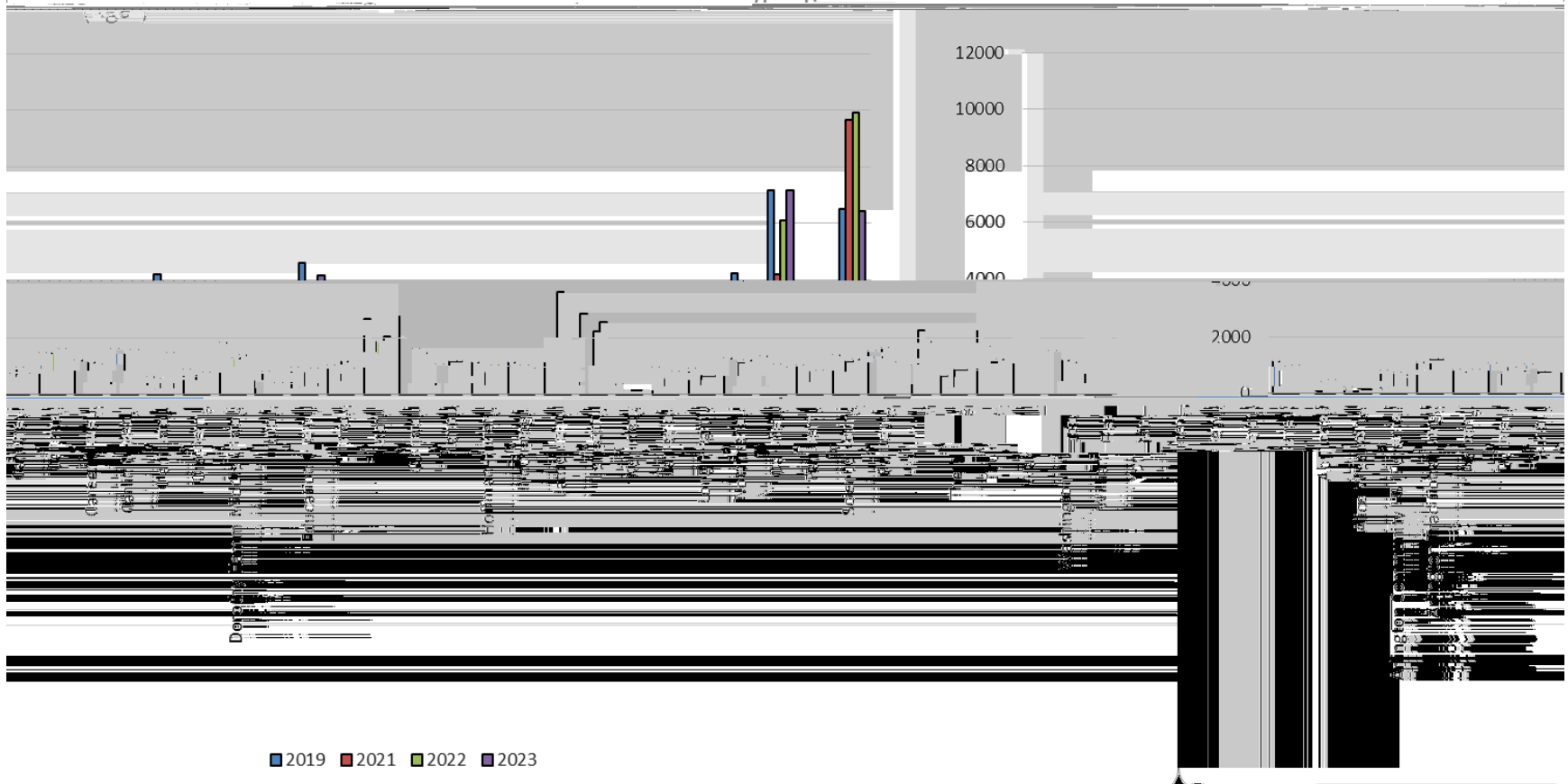
Note: The gray dashed line represents a Site EUI of 48.5. This is the national median for K-12 schools across the U.S., per ENERGY STAR. Schools below this line are seen as more energy efficient than the national median school.

<https://portfoliomanager.energystar.gov/pdf/reference/US%20National%20Median%20Table.pdf>

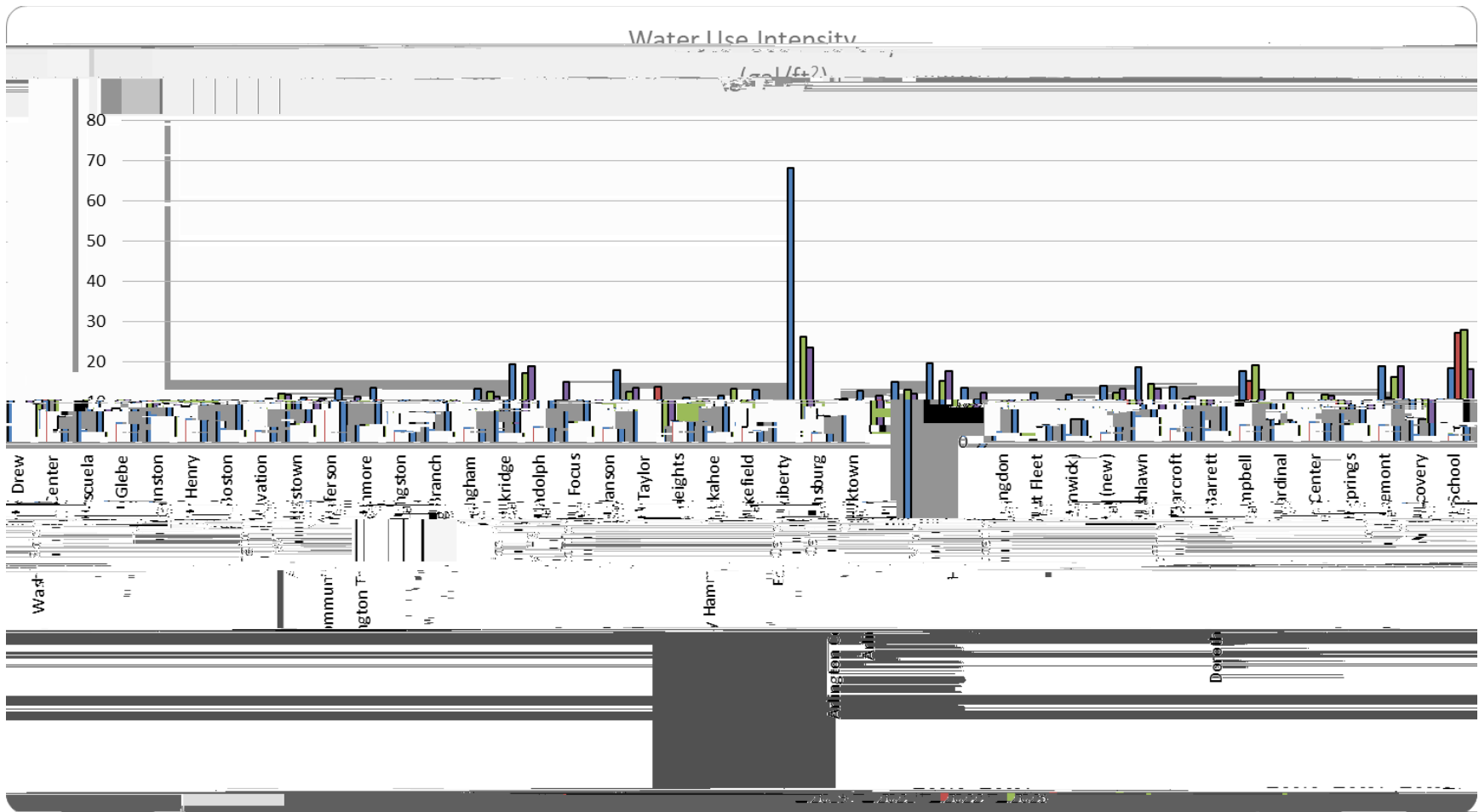
Source EUI



Water Use



■ 2019 ■ 2021 ■ 2022 ■ 2023



Note: MPSA (Henry) and the high water usage is accurate - The building cooling system had issues resulting in higher water usage than typical, which were resolved in 2019.

Appendix C: