

Five Star Sustainable

Adams 12 Five Star Schools // Sustainability Report

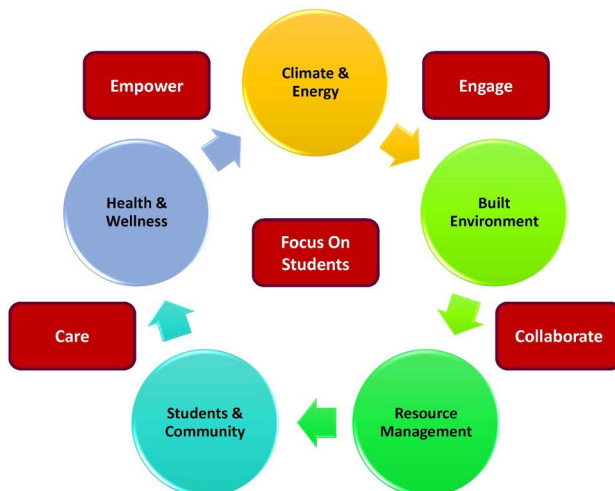
2022 Fall Report

Student Sustainability Advisory Council

The [sustainability department](#) at Adams 12 Five Star Schools is continually looking to engage students, staff, and community members, save the district money, and reduce the district's impact on the environment. In an effort to further enhance student engagement, and allow student voice to help inform the future of sustainability for the district, **we want YOU to join the newly formed Student Sustainability Advisory Council.**

This advisory network will initially be comprised of student representatives from the high school level and will work together within their high school to determine the interests and needs of their student body as it relates to sustainability. They will also come together collectively during the school year to help set a new vision for sustainability and identify larger, district-wide approaches to reducing the district's environmental impact and operational costs, and improving our local communities.

If you are interested in learning more or getting involved as this process develops, please email Shannon Oliver directly at Shannon.T.Oliver@adams12.org.



Adams 12 Five Star Schools Sustainability Framework

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Energy and Sustainability is responsible for managing utility use and for promoting social, economic and environmental sustainability for the district. Efforts include installing more energy efficient equipment, managing our water consumption, tracking our bus fleet fuel use and engaging our students to be better stewards of the environment.

We're taking steps to "go green." That means our schools and district departments are working to be wise stewards of our resources. Learn how we are being sustainably smart – and how you can do your part.

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Fiscal Year 2021-2022 Utilities & Sustainability Benchmark

The process of benchmarking involves establishing a baseline for something you are interested in tracking over time and then comparing recent performance to that historic baseline. For the utilities and sustainability metrics established by the district, rolling three-year baseline periods are tracked for comparison, such that a particular fiscal year (FY) benchmark compares that fiscal year's data to the three-year average baseline immediately preceding the benchmark year. For example, the most recent 2021-2022 FY is being compared to FY 2018-2019 through FY 2020-2021. This allows us to compare the impact of our operations for each fiscal year to an average period in the recent past. A minor exception to this process exists for our water usage and costs, as this data is tracked and compared on a calendar year basis versus the fiscal year (due to the watering season being focused during the summer months). For this current benchmark, water use and cost are detailed for the 2021 calendar year and the baseline data covers the 2018-2020 calendar years.

A few highlights from this benchmark include:

- A net increase in our districtwide Waste Diversion rate of 3% (14% year-over-baseline improvement), which includes a reduction of over 400 tons of waste going to the landfill and an increase of over 50 tons of compostable material diverted from the landfill.
- A net increase of 1% in district-wide electricity use that is offset by solar electricity production. That is equivalent to nearly 480,000 kWh of solar production and more than 2,080 tonnes CO2e avoided!
- Energy usage and costs are up significantly due to a few factors: the 3-yr baseline includes data from March-August of 2020 during which district operations were very limited due to the COVID-19 pandemic; and, during the current benchmark year the district had implemented increased ventilation operations in response to the COVID-19 pandemic which resulted in higher electricity and natural gas use.

FY 2021-2022 UTILITIES PERFORMANCE BENCHMARK

Parameter	Period	Performance	% Change
 Electricity Use (kWh/yr)	3-Year Baseline FY 2021-2022	39,633,281 40,294,263	1.7%
 Natural Gas Use (therm/yr)	3-Year Baseline FY 2021-2022	176,347 202,740	15.0%
 Energy Use Intensity (kBtu/sq. ft.) ¹	3-Year Baseline FY 2021-2022	59.7 65.0	8.8%
 Renewable Energy Offset (%)	3-Year Baseline FY 2021-2022	6.4% 7.4%	15.6%
 Bus Fleet Fuel Efficiency (gal/VMT)	3-Year Baseline FY 2021-2022	6.1 5.9	-2.3%
 Total Water Use ² (kGal/yr)	3-Year Baseline 2021	206,134 218,212	5.9%
 Waste Diversion Rate (%)	3-Year Baseline FY 2021-2022	20.1% 23.0%	14.1%



¹ Energy Use Intensity (EUI) is total energy use divided by area.

² Total Water Use Benchmark based on calendar year.



Final installation of 365 kW rooftop solar array at STEM Lab.

Guaranteeing a Sustainable Future

Beginning in the 2018-2019 school year, the sustainability department in conjunction with the facilities, maintenance, and construction departments released a Request For Proposal to conduct an [Energy Performance Contract](#) to improve the energy and water efficiency of several schools. Construction activities for this project wrapped up in the spring semester of 2022, and utility and cost savings are beginning to be accounted.

One huge success of this project was the installation of a 365 kW rooftop solar array at STEM Lab (photo) which began producing electricity into the grid in February 2022. The solar production (green) compared to building energy use (red) can be compared through the [eGauge](#) installed there. Additionally, once we have 12 full months of production data for the array we will be able to determine if this building will be the district's FIRST [net zero electricity school](#)!

The Sustainability Team



Chris Wilderman
Maintenance and Operations Director

Chris worked previously for Adams 12 Five Star Schools as the Security Manager before moving to Boulder Valley School District for five years as the Director of Operations, Security and Environmental Services. Eager to return to Five Star Schools, Chris took on the role of Maintenance and Operations Director in July 2017. He leads the sustainability, maintenance, custodial, community use, and environmental health departments.



Shannon Oliver
Manager of Energy and Sustainability

Shannon began with Five Star Schools in February 2016, with a passion for minimizing the impact we all have on our surrounding environment and protecting our health from the potential negative impacts of a contaminated environment. He has a Bachelor of Science in Environmental Health from Colorado State University and a Master in Public Health—Global Environmental Health from Emory University. Shannon is excited to continue working with district students and personnel to achieve meaningful reductions in energy and water use, help improve waste reduction efforts, and expand the sustainability department's impact to cover more topics and areas of focus.



Ed Jolly
Energy Engineer

Ed began with Five Star Schools in July 2018 and has over 21 years of experience in energy management and building operation. He has a Bachelor of Science in Mathematics from Metropolitan State University in Denver. Ed is excited to apply his knowledge and expertise to district operations for energy and cost savings.



Bret Lynch
Water Resource Specialist

Bret has been on the Grounds team for Five Star Schools for over 7 years, has two degrees in horticulture and business, and has been in the landscape industry for 26 years. He is excited to jump in and use his knowledge of botany and integrated pest management to continue making our landscapes more sustainable. The Water Resource Specialist role will continue as the point contact for irrigation programming, and will work with the irrigation techs and grounds team on repairs and other landscape maintenance projects to reduce the largest use area for our water resources.