

SMMUSD Fiscal Year 2022-23 Sustainability Progress Report

The report below is intended to provide updates, highlight specific sustainability initiatives and note progress made throughout FY 2022-23 as it relates to the Districtwide Plan for Sustainability.

Districtwide Energy Usage

Highlights

- **Districtwide energy consumption (natural gas + electricity) increased by approximately 23% in FY 2022-23 compared to our baseline year, FY 2017-18.**
 - Districtwide electricity use increased by 7% compared to our baseline year.
 - Districtwide gas use increased by 45% compared to our baseline year.
- **Electricity use decreased 6% from prior year 2021-22, but the cost was 10% greater due to rising utility rates.**

The Sustainability Plan goal for 2020 to reduce energy use by 20% compared to the 2017-18 baseline was achieved and exceeded in FY 2020-21. Efforts to reach the Sustainability Plan goal of a 25% reduction in energy consumption by 2025 are ongoing. These include operational facilities changes and shutdowns for lights and Heating, Ventilation, and Air Conditioning (HVAC) systems, the continuation of energy efficient systems installations, planning for future rooftop solar systems, and faculty, staff and student education to make behavioral changes across all District sites. This year, the District has enrolled in Southern California Edison's Demand Response Program. Through this program, the District curtails electricity use at various sites when grid demand is high in return for money back on our utility bill. This is an energy and cost savings program for the District.

The energy use increase in FY 2022-23 was anticipated for several reasons. In FY 2021-22, air conditioning systems were introduced at five schools, and the Samohi Discovery building (the District's largest), its Olympic-sized pool, and the John Adams Middle School Performing Arts Complex were in full operation for their second academic year. Ongoing maintenance issues with various HVAC systems made building energy management strategies difficult to implement. The 2022-23 academic year was also one of the coldest and wettest in recent decades which resulted in large increases of heating in all school facilities during the winter months. These newer large buildings, added air conditioning, and increased use of heat Districtwide have all contributed to the elevated volume of energy used in 2022-23 compared to the baseline. The decrease in electrical use compared to the previous FY 2021-22 can be attributed to operational facilities energy management efforts.

Districtwide Electricity Sourcing

Highlights

- **As of March 15, 2023 SMMUSD once again receives 100% of its electricity from renewable sources.**

On March 15, 2023 the School Board of Education gave a unanimous approval for the District to source its electricity from 100% renewable sources through the Clean Power Alliance. The District is a customer of the Clean Power Alliance (CPA), an organization that offers a variety of power plans with differing levels of renewably-sourced energy. The District previously ran on 100% green power through the CPA from March 2019 until March 2020, when the decision was reversed due to costs. Since then, District schools and offices have received 40% renewable energy, except for Samohi and Malibu High School which were downgraded to zero percent.

The new energy sourcing breakdown includes CPA providing 100% energy for all electrical accounts including Samohi and MMHS, and SCE will still serve as the pipeline to deliver electricity to the District. However, through the partnership with CPA it will come from energy generated by renewable sources rather than natural gas. This transition to 100% renewable electricity meets the 2020 Sustainability Plan goal.

Solar Energy

Highlights

- **18% of total District electricity was generated by rooftop solar photovoltaic systems across 9 sites.**

In summer 2022, the District's newest rooftop solar systems were fully operational on the Samohi Discovery building (257 kW system) and Malibu High School A/B building (180 kW system). It took several months before each system's solar generation monitoring platforms were fully configured, so the 2022-23 data is incomplete for several months for these two systems. The District continues to receive solar generated energy from rooftop systems on the Samohi Innovation building and 7 elementary schools.

Additional rooftop solar systems are planned for the Malibu New High School building and the Samohi Exploration building, which are slated to be completed in the 2024-25 school year. The District is anticipated to meet the Sustainability Plan goal of generating 30% of the District's electrical need from solar by 2025. These upcoming systems will increase onsite solar energy production, improve the District's energy resilience, offset peak demand billing charges and reduce the District's greenhouse gas emissions.

Water

Highlights

- **2022-23 Districtwide water usage decreased by 37% compared to the baseline 2017-18 year.**

The 2022-23 year was the lowest water using year on record since the District baseline was established and tracking began in 2017-18. The District used 37% less water compared to the baseline year, and 25% less than the prior year 2021-22. This significant decrease can be attributed to the exceptionally wet winter and spring seasons and ongoing District water conservation measures (smart irrigation control systems, low-flow and water-efficient plumbing fixtures, utility bill management, etc.). The District continues to incorporate drought-tolerant landscaping as a part of new construction projects, such as the future Malibu New High School building. An artificial turf field is also planned for Will Rogers in winter 2023-24 which will further eliminate water previously used for grass field irrigation.

Metro GoPass TAP Card Program Year 2 – Sustainable Transportation

Highlights

- **2022-23 Totals: 2,637 student card registrations and 154,295 boardings (85% increase from Year 1)**

Year 2 of the Metro GoPass TAP card program ended with almost the same amount of student registrations as Year 1 (2021-22), which was a total of 2,637 card registrations. That is equivalent to approximately 30% of the SMMUSD student population. 154,295 boardings were recorded on various participating transit agencies, which was an 85% increase from the amount of Year 1 boardings. More students using public transit equates to a decrease in vehicles on the road. Students benefit from engaging with peers on public transit and getting exercise walking to and from bus stops, parents and guardians may be freed from driving to school, and less vehicular emissions enter the atmosphere from fewer cars on the road. This is an excellent sustainable transportation program that contributes to healthy local air quality and relief of traffic congestion around SMMUSD schools. The program will run again for a third year in the 2023-24 school year.

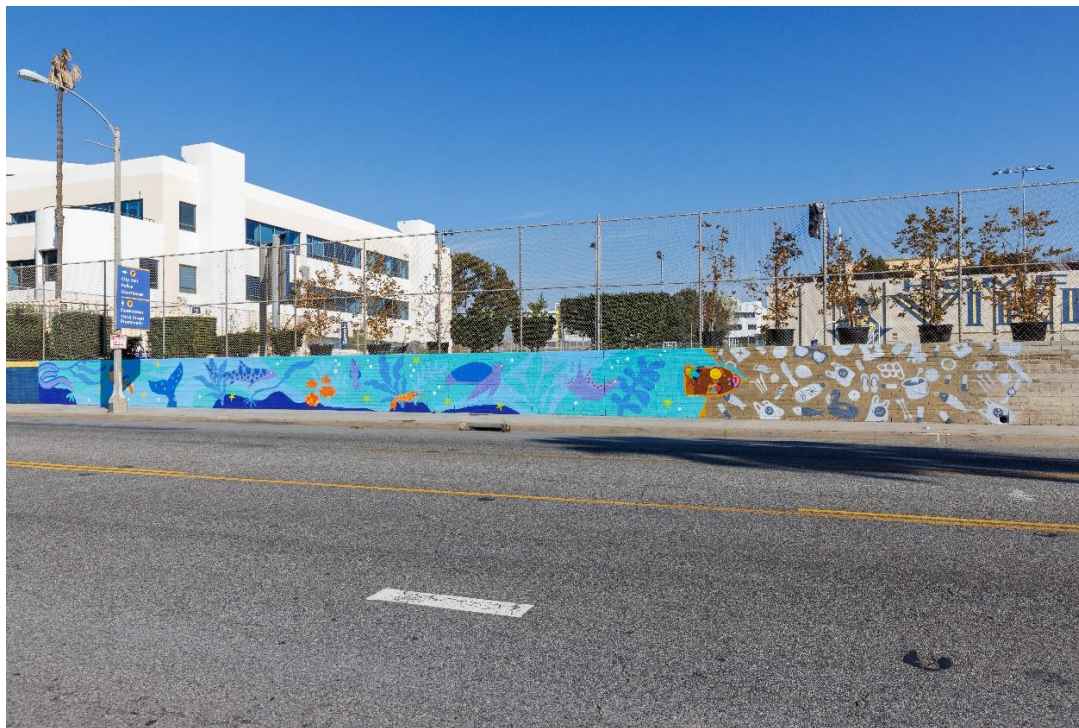
Samohi 4th Street Sustainability Mural – Ocean Health

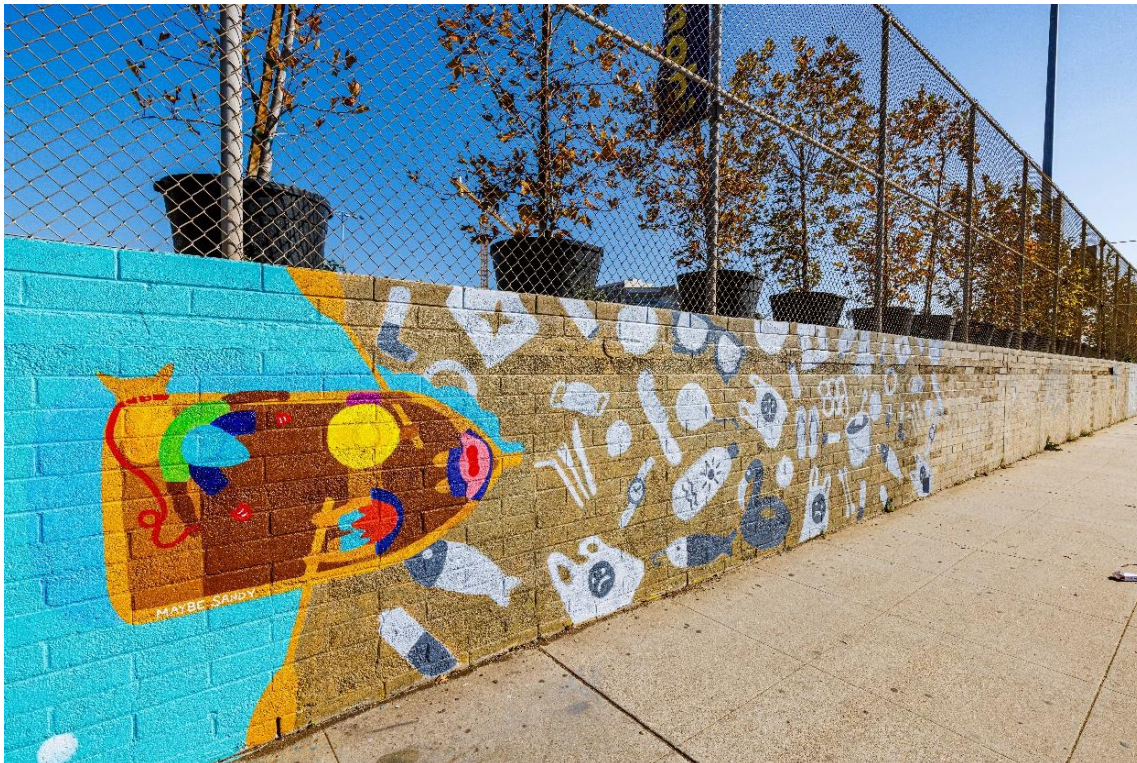
In fall of 2022, District Sustainability staff collaborated with Samohi students and staff, the City of Santa Monica's Office of Sustainability and the Environment, Upworthy (a media company focused on positive storytelling), and a local muralist to design a sustainability-themed mural for the west-facing 4th Street wall at Samohi. After several rounds of creative review, the mural was completed in December 2022. The mural is a 125-foot striking depiction of a clean marine environment and includes messaging of addressing ocean pollution. (See Pictures below)

Before:



After:





Gardens & Outdoor Learning Spaces

Malibu Middle School and High School (MMHS)

During spring of 2023, the District purchased a new compost box system and storage shed for the rooftop garden on top of the MMHS administration building. In addition, through a partnership with the Malibu Boys & Girls Club, raised garden beds were constructed to compliment the outdoor learning space. Students have been able to grow fruits and vegetables in the beds and compost the green waste from the garden. Irrigation controls were installed in the area by District Maintenance staff to maximize ease and efficiency of garden operations. The space has become a unique learning environment for science classes and environmental student clubs on campus.

Photos: Spring 2023



Santa Monica Alternative School House (SMASH)

A student from the Project-Based Learning (PBL) Pathway program collaborated with District Sustainability staff to plan and implement an urban orchard at the SMASH campus as part of a senior project. The project aim was to plant various fruit trees on a school campus to provide learning opportunities for students as well as fruits for students and staff, and to beautify the school grounds. The trees planted included a fig tree, apple tree, mandarin orange tree and nectarine tree. The trees will grow to provide natural shade, which helps offset the urban heat island effect present in Santa Monica. The urban heat island effect is a phenomenon in which urban areas become hotter on average than

surrounding rural areas as a result of concentrated urban surfaces like pavement, asphalt and roofs. These urban land cover types absorb more solar radiation and release it as heat. Planting trees in urban areas provides shade and decreases surface area that can absorb solar radiation, which helps to cool local air temperatures.

Photos: Spring 2023



Will Rogers Regenerative Farm

The regenerative farm at Will Rogers received 2 new compost box systems, bringing the total to 3 systems at the site. The school began working with Full Circle Compost, a local garden education organization, to implement a comprehensive school food waste composting system. Students now sort food waste from their own lunches and from the school cafeteria to be turned into usable soil through the farm compost system. Students continue to receive hands-on learning opportunities in this unique outdoor learning space that tie into NGSS topics such as biodiversity, food systems, composting, and nutrition.



Webster Elementary

Webster Elementary received a major garden renovation in the summer of 2022. New landscaping, a walking path, revitalized garden boxes, a new irrigation system, a compost bin, and fruit trees were included in the makeover. Garden and composting education classes are continuing, students have been growing various fruits and vegetables, and they are composting all of the food waste from their lunches and the school cafeteria. The Boys & Girls Club of Malibu continues to work with students and teachers in the outdoor learning space.

Malibu Middle School – Shoreline Restoration Field Trips

In February 2023, two groups of 50 students from Malibu Middle School visited Zuma beach and met with The Bay Foundation to learn about the ongoing Malibu Living Shoreline Restoration Project. The project aims to restore three acres of sandy coastal habitats into a sustainable coastal strand and promote the growth of native plants which help build up sand dunes that are resilient to sea level rise. Students documented California native plants that were present throughout the restoration site, conducted research on the plants, drew detailed pictures, and also removed invasive vegetation.



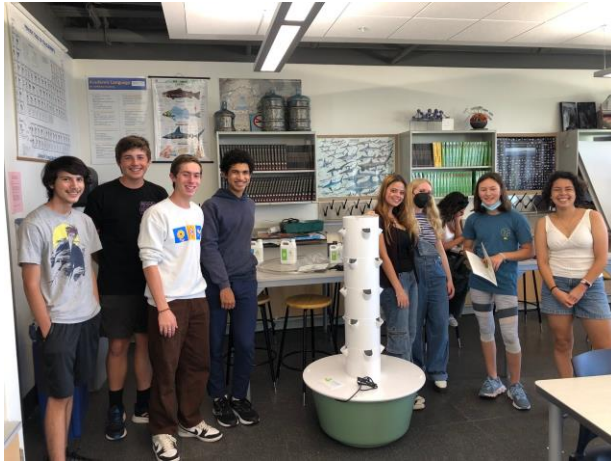
Samohi Discovery Building Rooftop – Hydroponics & Aquaponics Garden Sustainable Agriculture

Highlights

- **2 tower garden hydroponics systems were assembled and a substantial amount of produce was grown.**

In FY 2021-22, Sustainability staff and Samohi teaching staff developed a plan for aquaponics and hydroponics systems to be installed on the Discovery building rooftop. In June 2022, the Board of Education approved the budget for the plan. In winter 2022-23, Samohi students assembled two hydroponic tower gardens and successfully grew kale, arugula, romaine, butter lettuce and more! Two additional systems are yet to be built, which include aquaponics (the use of fish for fertilizing and growing plants). Students will be able to tap into various STEM aspects of growing their own food sustainably and without soil. These are unique and innovative project-based learning opportunities.

Below is Samohi's Team Marine club assembling the first systems to arrive in September 2022. Featured are the Juice Plus+ hydroponics garden tower system and the produce that was grown.



Bike It! Walk It! Bus It! - October 2022 and May 2023

Sustainable Transportation

Franklin Elementary won the October 2022 Bike It! Walk It! Bus It! competition and took home the Golden Sneaker Trophy with 94.1% student participation! 10 schools participated in the October event. Then in May 2023, Grant Elementary won the event with a student participation percentage of 89%! There were 9 total schools that participated in the May event. Bike It! Walk It! Bus It! promotes the use of alternative, sustainable forms of transportation to get to school and encourages students to use their Metro GoPass TAP card for free public transit rides.

October 2022 – Franklin Elementary



May 2023 – Grant Elementary



Districtwide Electronic Waste (E-waste)

Highlights

- **2,737 lbs. of e-waste were donated to Human-I-T and diverted from the landfill in 2022-23**
- **\$3,301 returned to the general fund from the public auction of some District-purchased e-waste**

In FY 2022-23 a majority of e-waste collected throughout District sites was donated to Human-I-T, a local nonprofit organization. Human-I-T restores technology products to be used by low-income

individuals and nonprofits and responsibly recycles end-of-life items. SMMUSD continues to divert 100% of all electronic waste from landfills. E-waste items include laptops, desktop monitors, printers, copiers, headphones, and more. Diverting e-waste from landfills is a District best practice because the heavy metals and toxic chemicals found in these items are harmful to the atmosphere, groundwater, and human health when not responsibly managed. Recycling e-waste also adds to avoided greenhouse gas emissions that would have come from the manufacturing of new devices. E-waste that could be publicly auctioned was auctioned off. The funds from auctioned e-waste returned to the general fund in the 2022-23 school year. The District plans for any future funds from publicly auctioned e-waste to be allocated to the sustainability fund.

Green Buildings & Collaborative for High Performance Schools (CHPS)

The Malibu High School Phase 1 and Samohi Phase 3 projects are both on track to meet and/or exceed the CHPS designed +25% goal as outlined in the Sustainability Plan. CHPS criteria is utilized in all SMMUSD new construction and major modernization projects to guide high-performance school planning, design, execution, and operations strategies, tactics, and products. The Malibu High School Phase 1 building is designed to be the first Zero Net Energy (ZNE) building in the District. This means that the renewable energy generated from the building's solar power will be equal to or more than the energy that the building consumes over the course of a year. Once completed, this building will mark a huge step forward in sustainable design and operations for the District. Additionally, rooftop solar systems are planned for the Samohi Phase 3 project, the future McKinley New Classroom building and the future Will Rogers Early Elementary School building.

Solid Waste Management & Samohi Audits

In June of 2023, District Sustainability staff and students from the Samohi Team Marine environmental club conducted a waste audit to analyze how efficiently Samohi waste is sorted by students and staff. Bags of waste were sampled from the landfill and recycling dumpsters and the contents were sorted into the three major waste categories: landfill, recycling, and organics. The bags sampled from the recycling dumpster contained an average of 15% recyclable materials and the majority of the contents were either food waste or landfill material. The bags sampled from the landfill dumpster had an average of 30% recyclable materials inside. While this audit is a single day snapshot at one school, it is part of a larger waste management effort to increase recycling rates at all District sites and promote proper waste sorting techniques among staff and students. More audits will take place in the 2023-24 school year and efforts to train staff and students are being planned.

Photos: June 2023



Summary

SMMUSD has set out on a sustainable path and maintains its commitment to educating the next generation of environmental stewards and implementing sustainability into District operations. The Districtwide Plan for Sustainability, adopted by the Board of Education in 2019, set forth ambitious goals for the District to meet. Many of the goals outlined in the plan have been reached and milestones have been surpassed despite the large volume of new construction and additions to District facilities, which were not originally accounted for in the drafting of the Sustainability Plan. The District recognizes that there is more work to be done at all schools and sites and will continue efforts to further sustainable operations, practices, and sustainability education.

Please email Austin Toyama, SMMUSD Sustainability Manager, at atoyama@smmusd.org with any questions.