



Mountain View
Whisman
School District

Environmental Sustainability Advisory Council Progress and Request for Guidance

August 17, 2023



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Board Resolution

Board Resolution 05-012623 Climate Change and Green Schoolyards

The resolution passed by the Board on January 26, 2023 has guided the work of the district and advisory council.



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Strategic Plan 2027

Strategic Plan 2027

Goal Area 5

- Equitable distribution of resources that support student success.
- Goal 5a: Ensure facilities and resources equitably serve all students.

Board of Trustee Direction

- Resolution this spring by the Board refreshed our efforts
 - MVWSD has the opportunity to be a leader when it comes to greening initiatives
 - The District already recycles, composts, has installed LED lighting and solar panels but MVWSD can do more
- We want to make a plan to guide and consistently implement our efforts moving forward



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Benchmarking...

Learning from Industry leaders

Looking To Others

- Los Angeles Unified SD has had a “*Learning Green, LAUSD Sustainability Initiative*” for over 10 years.
 - Department of 16 people focusing only on on sustainability.
 - Has in-house architectural and engineering teams.
- Won many awards including the Green Ribbon District Sustainability National Award by the US Department of Education.

LAUSD Program Areas



ENERGY
CONSERVATION



WATER
STEWARDSHIP



EDUCATION
&
AWARENESS



HIGH
PERFORMANCE
SCHOOLS



CAMPUS
ECOLOGY



EMERGING
TECHNOLOGIES

Program Areas explained

- **Energy Conservation:** reduce energy use.
- **Water Stewardship:** reduce water consumption.
- **Education and Awareness:** educate students, develop partnerships, and celebrate.
- **High Performing Schools:** apply best practices from Collaborative High Performance Schools (CHIPS), Leadership in Energy & Environmental Design (LEED).

Program Areas explained

- **Campus Ecology**-increase green space, outdoor learning, school gardens, permeable surfaces, and reduce heat island effect.
- **Emerging Technologies**-when appropriate pilot emerging technologies in schools and partner with industry leaders, utilities, and municipal partners.

Benefits of Program Areas

- Consensus on Program-Level Priorities
- Allow flexibility to execute specific strategies as opportunities and technologies evolve.



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Operationalizing the Resolution

Our Board Resolution

- Goals is to create a sustainability plan
 - We believe the goals of the Board resolution can best be met by mirroring aspects of LAUSD's overall program.
 - Each area requested by the resolution will be incorporated into the plan.

Possible programmatic areas

- **CAMPUS ECOLOGY**
 - Greening Index, Greening Score, Greening Metric, Greening Plan
- **HIGH PERFORMANCE SCHOOLS**
 - High Performance Design Metrics (CHPS, LEED)
- **WATER STEWARDSHIP**
 - Reduce Water Consumption, Replenish Groundwater/Stormwater Mgmt
- **EDUCATION AND AWARENESS**
 - Environmental Sustainability
 - Sustainability Advisory Council, Collaborative Approach
 - Curriculum & Learning Opportunities
 - Partnerships, State & Federal Sustainability Initiatives
- **EMERGING TECHNOLOGIES**
 - Green Vehicles & Equipment
 - Cost & Schedule Challenges
- **ENERGY CONSERVATION**
 - Transition to clean, renewable energy

Task Force Members

- Wide range of individuals that represent the community. Includes parents, staff, Canopy, Green Spaces Mountain View, and Living Classroom.
- Members' experience include a Ph.D. in Energy and Resources, EPA food recovery, Ph.D. in Ecology & Natural Resources, Indigenous Community, graduate degrees in environmental engineering, parents that are passionate about sustainable food choices, parents who have been actively involved in environmental groups in Mountain View.

Advisors

More advisors will be added as the committee continues its work. Currently the committee is working with:

- Landscape Architect: Carducci and Associates
- Construction Management: Greystone West



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Meeting Schedule and Topics

Schedule

Date	Topic
August 16, 2023	Food & Student Health, Plastic/Foodware
September 20, 2023	Greenspace for Schools/Community, Stormwater Management/Recycling
October 28, 2023	Urban Forests & Greening School Campuses, Living Classroom/Resilience Partnerships (Federal, State, Municipal, NGO)
November 22, 2023	Green Vehicles & Equipment, Cost & Schedule Changes: Capital Projects, Operations/Maintenance, Equipment/Vehicles, Campus Ecology: Greening Index & Scores
December 13, 2023	Environmental Sustainability, Curriculum & Learning Opportunities
January 24, 2024	Environmental Sustainability, Review Draft Plan, Campus Ecology: Plans & Revised Scores
February 28, 2024	Review Draft Plan
March 13, 2024	Review Draft Plan, Campus Ecology: Prioritized Program
May 2, 2024	Board Presentation, Draft
May 16, 2024	Board Presentation, Final

Board Update Schedule

- August 17, 2023
- November 16, 2023
- February 29, 2024
- May 2, 2024- present draft plan
- May 16, 2024-present final plan



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Solar Update and Savings



MVWSD ANNUAL SOLAR REPORT

Feb 2022 – Jan 2023

Katie Crider, Director of Asset Management

August 17, 2023



REPORT OVERVIEW

This report reviews the performance of eight Solar PV systems installed by ENGIE during 2021-2022 and owned by the District. The remaining three sites were not completed until 2023 and are not included in this report. Parameters evaluated are:

- PV energy production vs. expected production
- Financial performance of the portfolio
- Performance Guarantee Tracking
- Operational Issues
- ENGIE performance to contract

PORTFOLIO DETAILS



Mountain View Whisman	Phase 1	Phase 2
Commercial Operation Dates	Nov 2021 – Jan 2022	Jan 2023
Number of Sites	8	4
Portfolio Size, kWp*	1,125 kWp	500kWp
Modeled Production – Year-1, kWh	1,768,000	--
Modeled Annual System Degradation	0.5%	
Project Cost (Construction + Soft Costs)	\$8,864,616	
Annual Operations & Maintenance (O&M) Cost	\$40,200	\$19,500
Annual O&M Escalator	3%	
Performance Guarantee Percentage	95%, weather adjusted	
Performance Guarantee True-Up Term	Every 2 years	

*Graham MS and Monta Loma ES each have two separately metered arrays, monitored as separate sites within this report.



CURRENT YEAR PERFORMANCE

PORTFOLIO PERFORMANCE

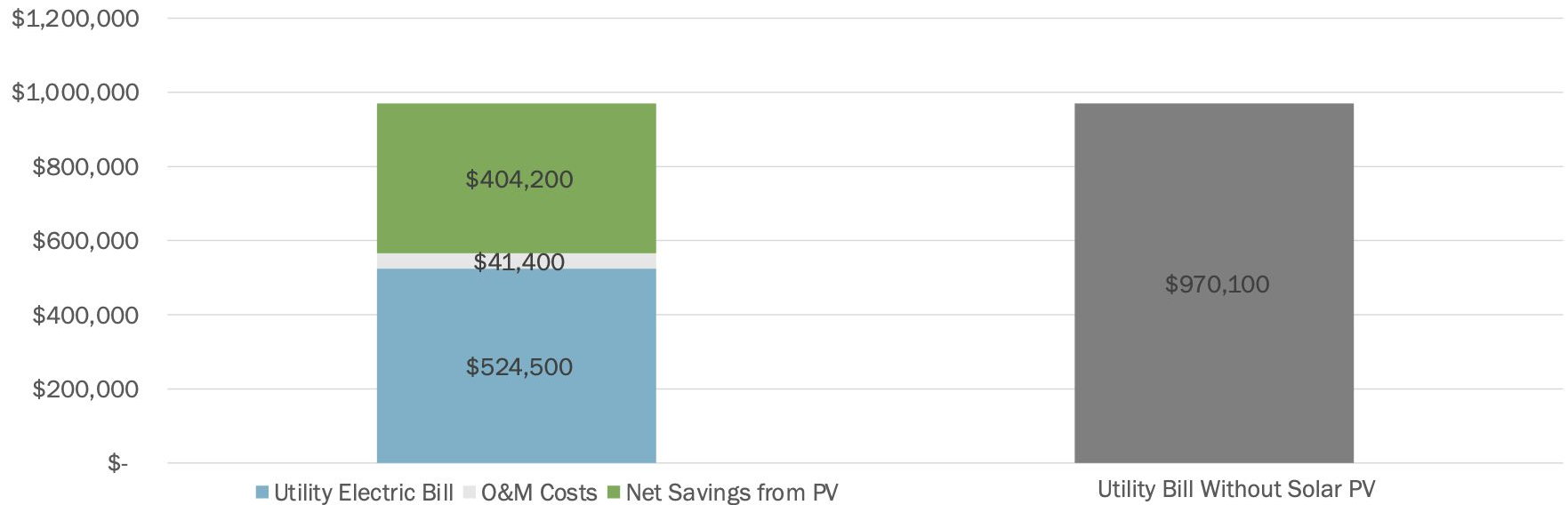


FEBRUARY 2022 - JANUARY 2023

Mountain View Whisman	
PV Energy Production (kWh)	1,799,500
Expected Energy Production (kWh)	1,767,000
Percentage of Expected Production	102%
Energy Consumption Offset	57%
Net Energy Savings	\$404,200

ELECTRICITY COSTS AND PV SAVINGS

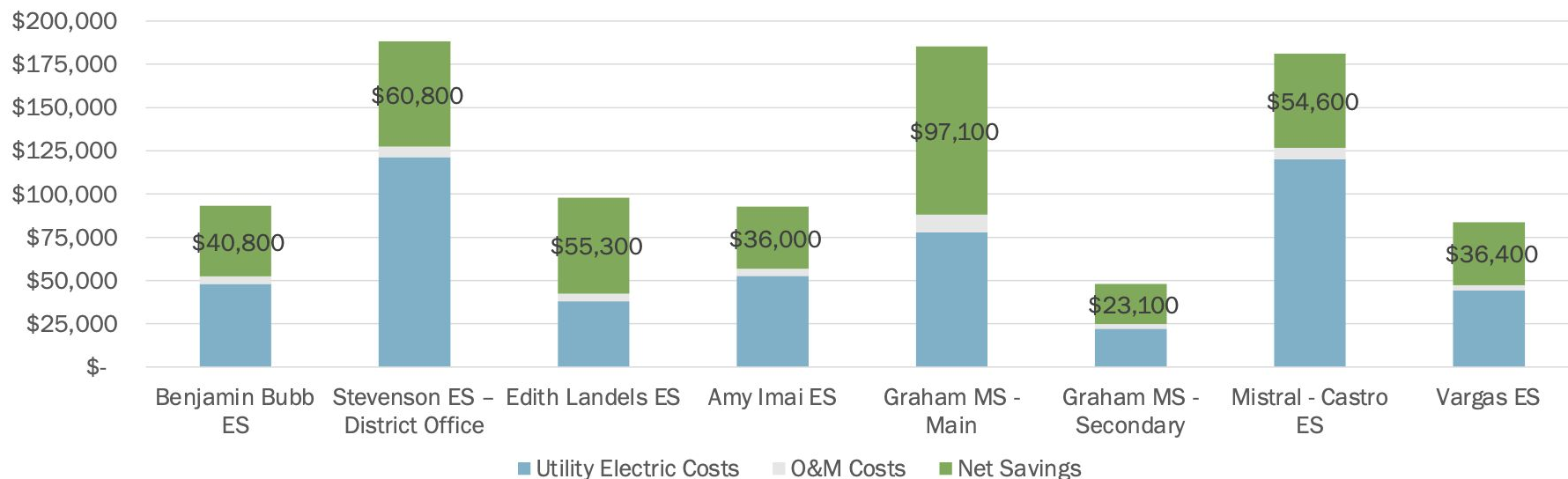
FEBRUARY 2022 - JANUARY 2023



The solar PV installations saved the district over \$400,000 over the course of the first year.

ELECTRICITY COSTS AND PV SAVINGS BY SITE

FEBRUARY 2022 - JANUARY 2023

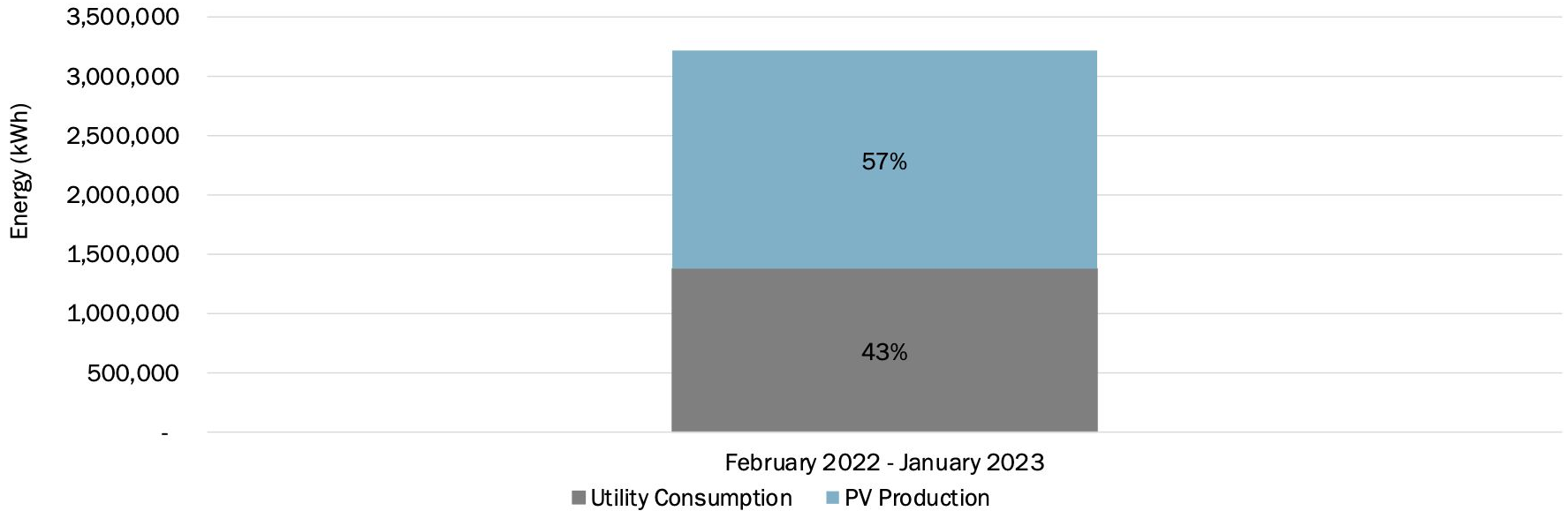


The solar PV installations saved the district over between \$23k - \$97k per site.

ELECTRICITY CONSUMPTION & PV PRODUCTION



FEBRUARY 2022 - JANUARY 2023

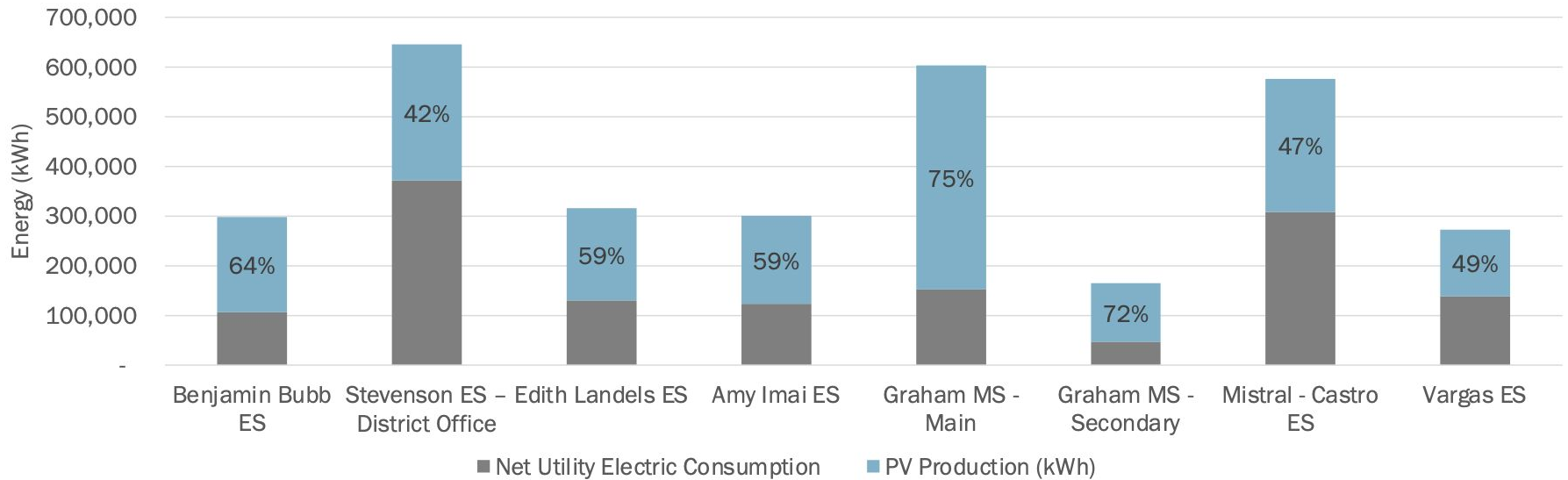


The solar PV installations offset 57% of the District's electric consumption for the year

ELECTRICITY CONSUMPTION & PV PRODUCTION



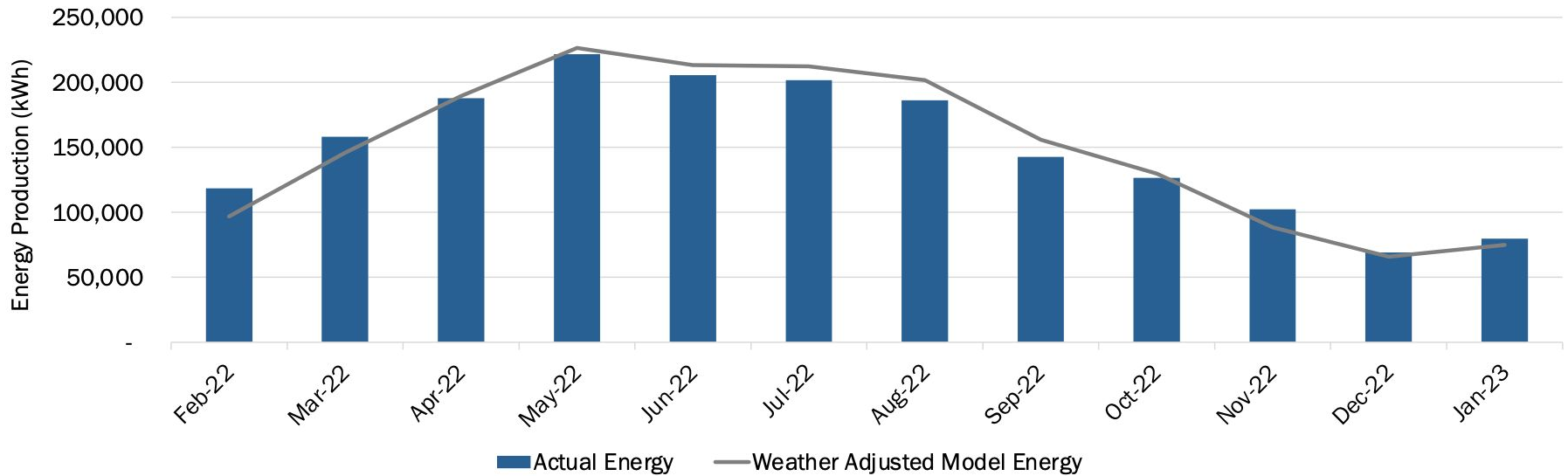
FEBRUARY 2022 - JANUARY 2023



The solar PV installations reduced utility electric consumption between 42% and 75%.

MONTHLY ENERGY PRODUCTION

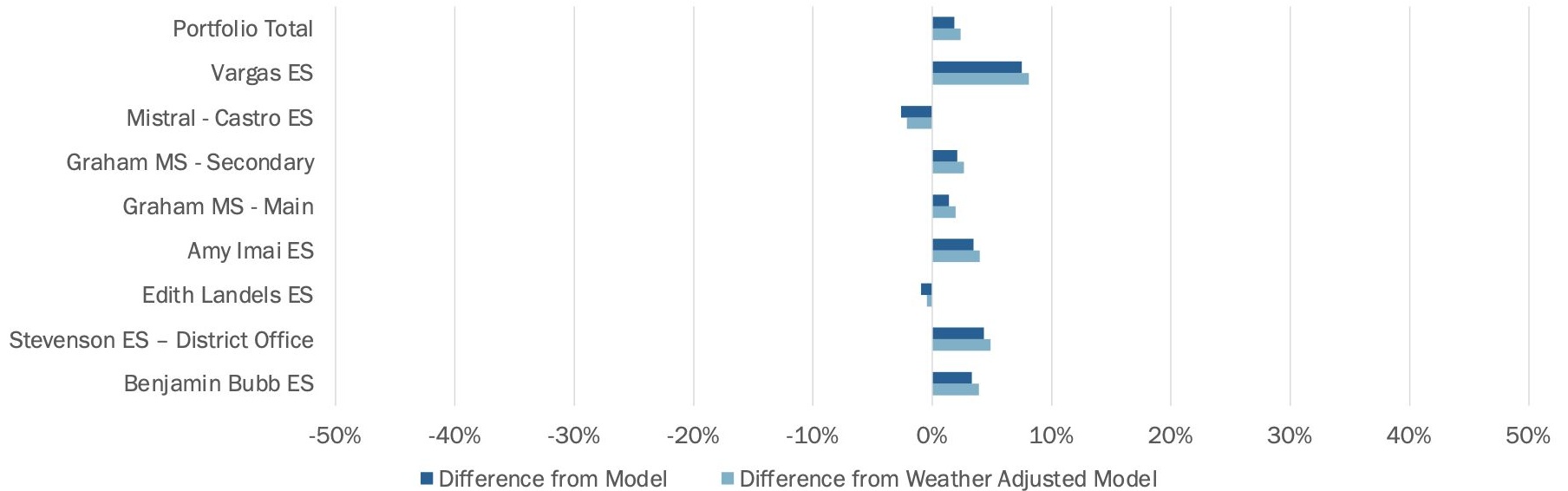
FEBRUARY 2022 - JANUARY 2023



Performance was slightly lower than the model in summer months, likely due to module soiling.

ACTUAL VS EXPECTED PERFORMANCE

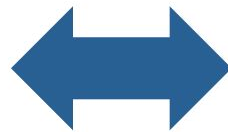
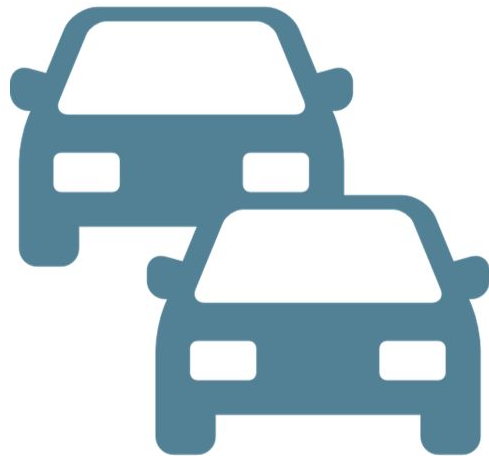
FEBRUARY 2022 - JANUARY 2023



Portfolio production exceeded model; all sites performed within operational expectations.

PORTFOLIO ENVIRONMENTAL PERFORMANCE

N|V|5



The District has offset carbon emissions equivalent to the emissions released from 277 passenger vehicles for one year.

The District has offset carbon emissions equivalent to emissions released from generation of electricity consumed by 282 California homes for one year.



ANALYSIS

All Sites

- All sites receive service from PG&E and the community choice aggregation Silicon Valley Clean Energy (SVCE)
- Sites are on a mix of demand based (A-10 and B-10) and non-demand based tariffs (A-6 and B-1)

Vargas ES

- Is on B-1 and would be marginally optimized on B-6 and save an additional \$2k annually. However, max demand at this site has been >75 kW for >3 months which is the threshold to move to B-10 by PG&E. A request to change tariffs at this time may trigger PG&E to move the site to B-10 which would cost an additional \$8.5k annually.

PERFORMANCE GUARANTEE (PEGU) SUMMARY

Mountain View Whisman	
PeGu Provider	ENGIE
First True-Up Date	November, 2023
PeGu True-Up Term	Every 2 years
Modeled Annual System Degradation	0.5%
PeGu True-Up Rate (\$/kWh)	\$0.221 in Year 1; escalates at 4.5%
PeGu Minimum Guarantee Percentage	95%
Weather Adjusted	Yes

DATA ISSUES

N|V|5

- No Data Issues

Questions

Questions on solar?



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Greening Index

MVWSD OUTDOOR LEARNING & GREENING STANDARDS

Presentation to Board of Trustees

August 17th, 2023



OVERALL STANDARDS DOCUMENT

SECTION 01: INTRODUCTION



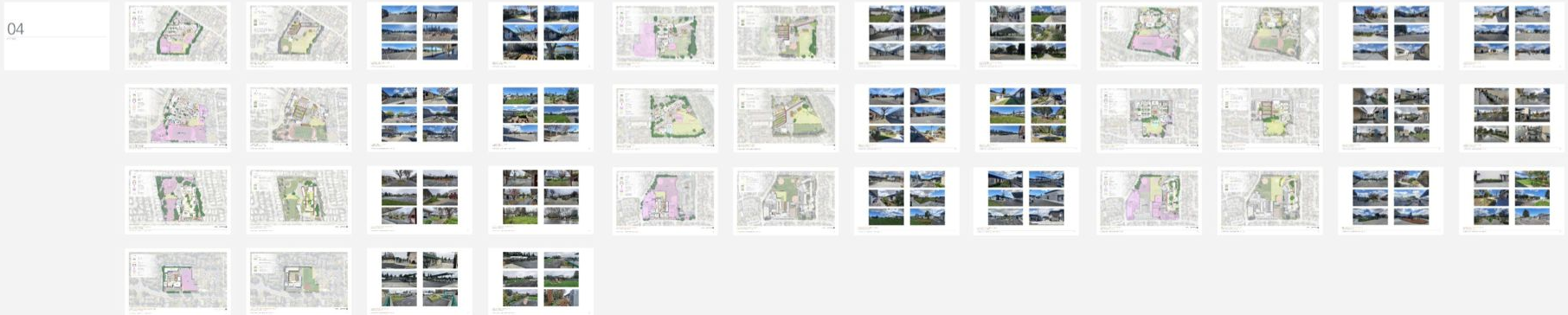
SECTION 02: SCORING



SECTION 03: IMPLEMENTATIONS



SECTION 04: INITIAL SITE ANALYSES, TAKEOFFS & PHOTOS



Mission Statement

The Mountain View Whisman School District Schoolyard Outdoor Learning & Greening Standards create a shared vision for the continued enhancement and maintenance of school grounds with the goal of creating natural spaces where students, staff, administration, and community members are comfortable, happy, and engaged.

MVWSD Outdoor Learning and Greening Standards | Carducci Associates



Outdoor Learning and Greening Standards Goals

MVWSD schoolyards are ***flexible and dynamic spaces*** that:

- Support equitable, diverse learning and recreational activities,
- Enhance physical and mental student well-being and happiness,
- Meet District-wide and school-specific goals, and
- Promote and inspire greater connection to and understanding of our natural world

Climate Change Resolution Recap

- **Green Index:** Prepare a Greening Index that establishes a specific percentage or ratio, including but not limited to green space and hardscape areas of each campus.
- **Green Score:** Prepare a tabulated metrics tool to measure progress towards greening goals, including heat reduction/shade, planting, and area of soft surfaces and planting. Create tool for future use.
- **Green Plan:** Establish a Greening Score for each MVWSD school site (11), applying the Greening Index. Document each school's status and tabulated ranking of 11 school sites.
- **Green Metric:** Prepare concept-level landscape plans for each school site (11 total) to increase green space to meet minimum standards (i.e., 30%).

Green Index

The following are a set of categories to measure the performance of outdoor school environments.

Together, they encompass the aforementioned mission for Outdoor Greening and Learning at MVWSD.

MVWSD Outdoor Learning and Greening Standards | Carducci Associates



Green Index Categories



PHYSICAL COMFORT

Schoolyards are comfortable, providing all students with access to a range of seasonally appropriate conditions, offering a variety of seating options, and emphasizing natural materials.



MENTAL WELL-BEING

Schoolyards provide for the mental well-being of students, staff and administration by offering opportunities and spaces for mindfulness, contemplation, retreat, and therapeutic sensory experiences.



EXPLORATION & DISCOVERY

Schoolyards increase the quality and quantity of interaction with nature by providing opportunities for natural exploration and discovery, and informal and unstructured play.



OUTDOOR LEARNING

Schoolyards provide opportunities to learn outside in spaces that cater to all ages and abilities, are located and designed to encourage frequent use, provide necessary teaching tools, and enhance ecological literacy.



OPERATIONS & SUSTAINABILITY

Schoolyards are operationally and ecologically sustainable, maximizing use of native and adaptive planning, use efficient irrigation systems, limit use of lawn and impermeable surfaces, and capture and infiltrate stormwater.



STUDENT SAFETY & EXPERIENCE

Schoolyards are safe spaces where students can access a range of recreational and learning opportunities within the supervision capacity and identified use zone of the school site.



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Environmental Sustainability Committee meetings YTD Feedback

Meeting Date Schedule

- May 2, 2023 (Tuesday @2:30pm) – Meeting with Specialists Team
- May 17, 2023 (Wednesday @12pm) – Advisory Council Meeting #2
- June 14, 2023 (Wednesday @12pm) – Advisory Council Meeting #3
- July 24, 2023 (Monday @12pm) – Advisory Council Meeting #4

Site Committee Input Summary

- Natural over synthetic materials, green space over hardscape
- Native & diverse plantings and garden types
- Outdoor learning is accessible and nearby classrooms
- Outdoor spaces support existing curriculum, provide teaching tools
- Opportunities for experiential/hands-on outdoor learning
- Opportunities for unstructured, sensory/tactile, & nature play
- Opportunities for wildlife engagement
- “Useable Space” can change over the years - create a comprehensive metric that doesn’t change over time



Questions?



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Small Changes in the New Year

Child Nutrition Share Carts

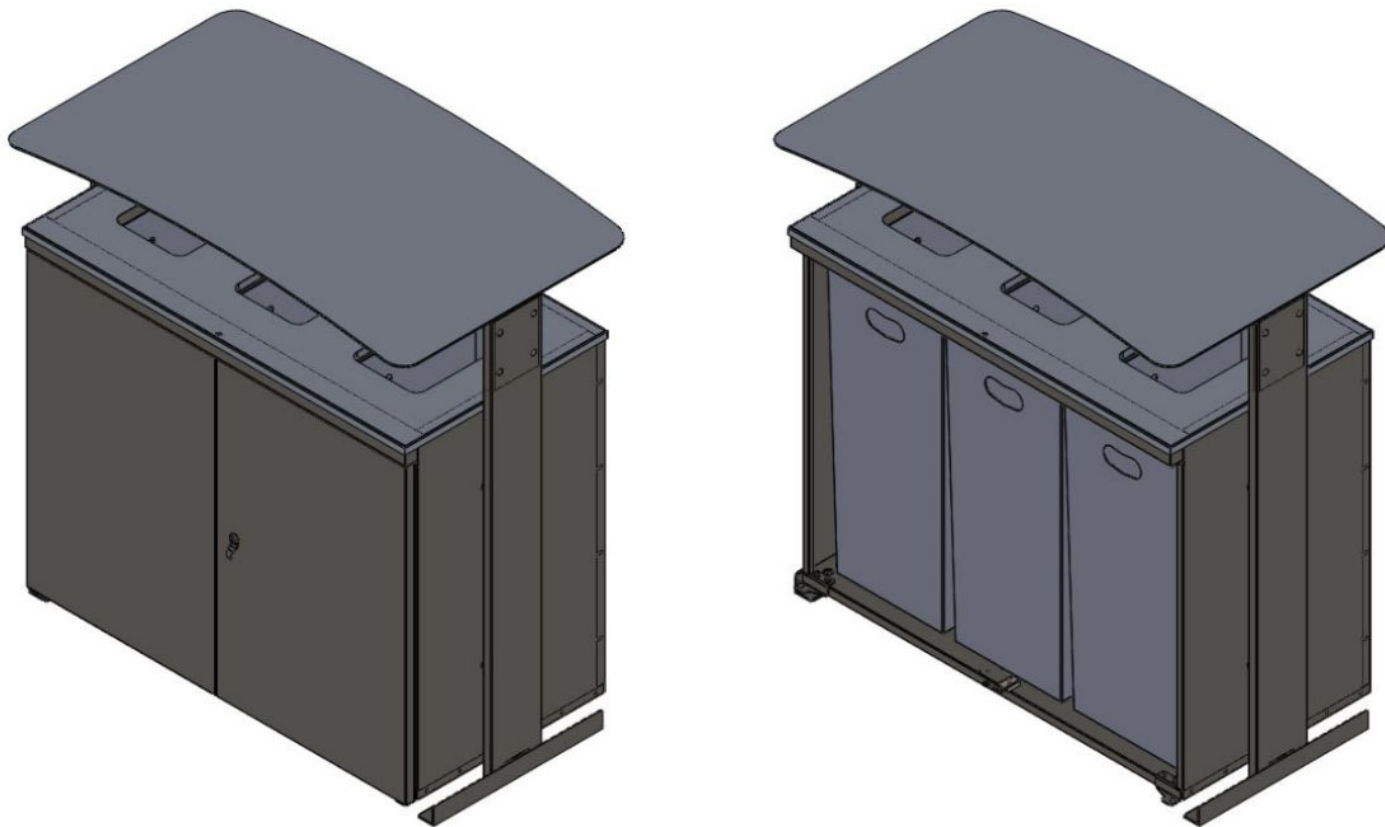


Take only what you need and new compostable materials

- Moving from our spork packet to birch wood.
- Birch wood is one of the few totally compostable woods and is free of toxins.
- Eventually will move towards metal cutlery



New Recycle, Compost, and Trash Receptacles at every site





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Next Steps

Grants and Green Ribbon

- Reapply for \$175,000 Green School Yards Cal Fire Grant at Castro (not selected for 2023).
- Submit application for the Green Ribbon School award.
- Will continue to monitor for other opportunities and that we have a reasonable chance of being awarded.

Road Forward

- Becoming a truly sustainable school district takes time, financial commitment, and is a culture shift
 - Students, parents, and staff will have to adjust to new ways of doing things. Sometimes this adjustment is not easy.
- Focusing on effective programs is time consuming
 - Have to collect data and assess efforts
 - Training programs and staff time to implement



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Feedback

Do these programmatic areas align with board direction?

- **CAMPUS ECOLOGY**
 - Greening Index, Greening Score, Greening Metric, Greening Plan
- **HIGH PERFORMANCE SCHOOLS**
 - High Performance Design Metrics (CHPS, LEED)
- **WATER STEWARDSHIP**
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