



Solar PV & Energy Efficiency Project Overview

June 27, 2023

Los Gatos - Saratoga Unified High School District

Agenda

Project Overview

Energy Audit Findings

Solar Photovoltaic (PV) Designs & RFP Financing Options

Next Steps and Preliminary Schedule

Project and Study Details

Project Overview

- ASHRAE Level 2 Energy Audit
- Solar PV systems
- RFP Preparation and Financing scenarios

Project Goals

Identify a project portfolio that:

- Reduces operational costs
- Optimizes financial benefits
- Decrease emissions and energy consumption

Project Overview & Status

Phase	Work	Contractor	Status
Develop	Solar Feasibility	NV5	Complete
	Solar Interconnection Application	NV5	Complete
	Energy Efficiency	NV5	Complete
	Solar RFP and Vendor Selection	NV5	25%
	Energy Efficiency Design/RFP	TBD	TBD
Deploy	Energy Efficiency Construction	RFP Determined	Not contracted
	Solar Construction	RFP Determined	Not contracted



Energy Audit Overview

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Energy Audit Findings

ASHRAE level 2

Energy Audit completed at two sites:

- Saratoga High School (SHS)
- Los Gatos High School (LGHS)

- Combined Payback of **3.8 Years**

Findings:

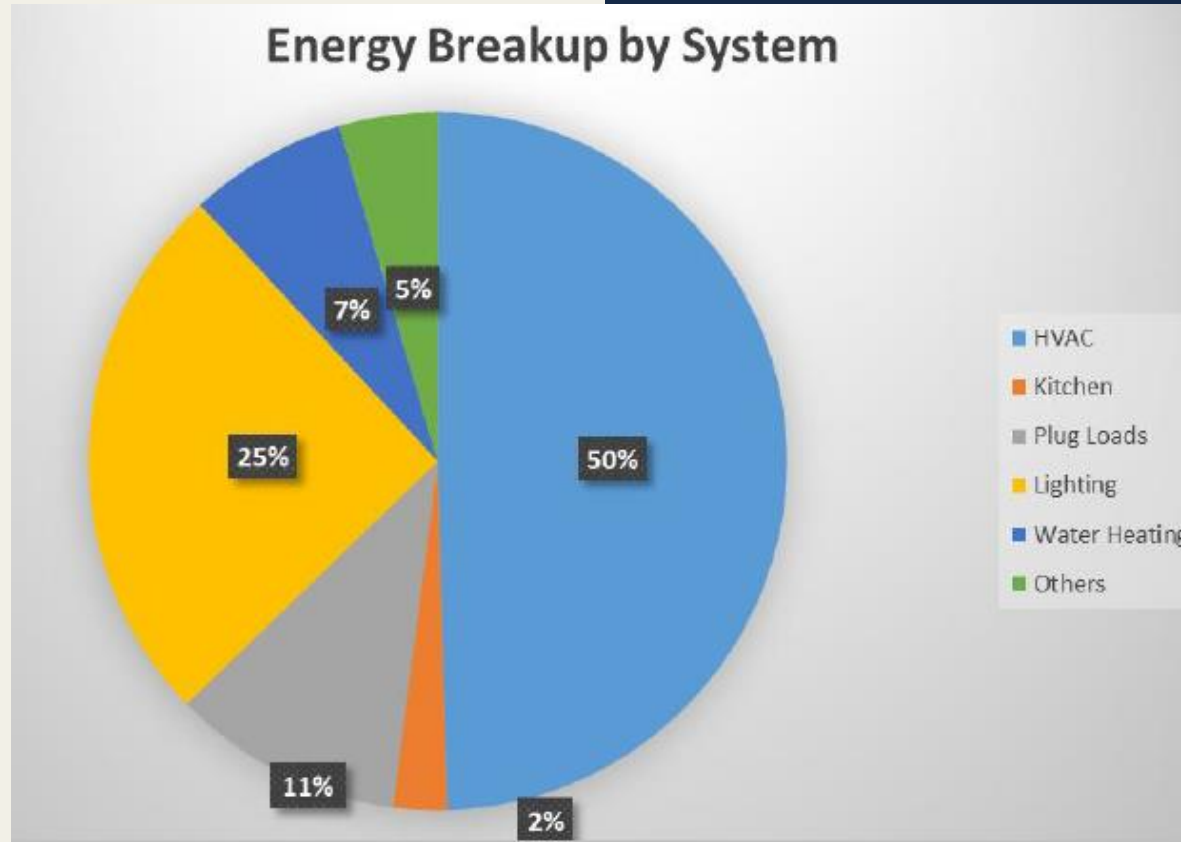
Five potential energy efficiency measures:

- Interior Lighting Upgrade
- Field Lighting Upgrade
- Wallpack Lighting Upgrade
- Repair SHS Pool Leak
- LGHS Cooling Tower Control

Energy Audit Findings

Purpose of Energy Audit:

- Establish a high-level understanding of energy usage
- Identify measures for energy use reduction



Energy Efficiency Measures:

- Assessed at varying levels of detail
- Figures show potential savings
- Costs based on industry benchmarks

Energy Audit Findings

Los Gatos High School

Electricity Consumption (kWh) 2020 - 2021



Saratoga High School

Electricity Consumption (kWh) 2020 - 2021



Energy Efficiency Measure Summary

EEM #	EEM Description	Project Cost (\$)	Electricity Saving (kWh/yr)	Water Savings (gal/yr)	CO2e (tons)	Total Savings (\$)	SPB (year)	Savings % of Site Energy Baseline
1	Interior Lighting Upgrade	\$ 225,636	285,853	0	62	\$ 43,964	5.1	5.3%
2	Field Lighting Upgrade	\$ 178,258	163,860	0	36	\$ 25,202	7.1	3.1%
3	Wallpack Lighting Upgrade	\$ 27,962	21,845	0	5	\$ 3,360	8.3	0.4%
4	Repair Pool Leak (SHS)	\$ 100,000	-	5,413,680	-	\$ 66,372	1.5	0.0%
5	Cooling Tower Control (LGHS)	\$ 2,720	11,908	0	3	\$ 1,831	1.5	0.2%
	TOTAL	\$ 534,575	483,466	-	105	\$ 140,729	3.8	9.0%

Estimated annual savings - \$140,729
GHG reduction of 105 tons CO2e

Energy Audit Findings

Typical Lighting Examples:



Saratoga High School Pool





Solar PV Overview

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Site Level PV Sizing

Site	System Size (kWp)	Yr-1 Production (kWh)	Grid Consumption Offset (%)	Grid Consumption Offset with EE measures (%)
Los Gatos	1,150	1,786,000	68%	75%
Saratoga #1	385	620,000	90%	100%
Saratoga #2	785	1,254,000	90%	100%

PV Conceptual Layouts

Los Gatos High School



PV Conceptual Layouts

Saratoga High School



Project Findings




Metric	PPA (Full term)
Number of Sites	2 sites (3 services)
Solar PV Size, Portfolio	~2.3 MW
Estimated Project Cost ¹	~10M
Project Development Costs (Soft Costs) ²	\$1.1M
25-year Net Savings (Nominal \$)	\$3.4M
25-year NPV Savings (Discounted \$)	\$2.4M

¹ Not applicable for PPA. Shown for informational purposes.

² Assumed to be rolled into the PPA price.



Financing Options

 <p>Energy Savings Performance Contract (ESPC)</p>	<ul style="list-style-type: none"> • Finance EE Measures and Solar PV over time • No up-front capital costs • Partnership between LGSUHSD and an energy service company (ESCO) 	<p><i>LGSUHSD would enter a contract with guaranteed operational and energy savings</i></p>
 <p>Power Purchase Agreement (PPA)</p>	<ul style="list-style-type: none"> • (Almost) No upfront cost to LGSUHSD • Third-party finances, constructs, owns and operates the system • LGSUHSD buys all electricity produced at contracted price for 20-25 years 	<p><i>Incentives are well aligned – if the system does not perform, the PPA owner does not get paid</i></p>
 <p>Tax-Exempt Municipal Lease (TEML)</p>	<ul style="list-style-type: none"> • Some upfront costs for structuring the lease contract • LGSUHSD pays lease payments whether the systems perform or not • Lowest financial performance of three financing options (~4.5% interest rate) 	<p><i>LGSUHSD must pay financing and lease payment costs and maintain the system, which requires a separate O&M Contract; LGSUHSD owns systems at end of lease</i></p>

Next Steps

Solar PV RFP is currently being drafted

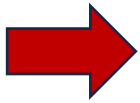
- Present options for Solar PV placement
- Financial Proposal options
- Refine conceptual designs
 - Incorporate proposed EE measures
 - Reduce solar array footprint to maximize benefits (90% offset)



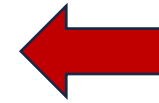
Next Steps

Solar Milestone	Duration	Date
Design-Build RFP Preparation	2 to 3 months	August 2023
RFP Issuance	1 to 2 months	September 2023
Vendor Selection	1 month	October 2023
Contracting Support	2 months	December 2023
Design, Permitting & Construction	9-11 months	October 2024
Commissioning and Closeout	1 to 2 months	November 2024

District Support



- Legal Forms
- Site Information



August 8th Board meeting



THANK YOU