MARYSVILLE JUSD
ENERGY SERVICES PROGRAM

INTRODUCTIONS

Jennifer Butler, FMP
Facility Solution Specialist
707-396-6266
jennifer.butler@sitelogiq.com

Kevin Madden
President & CEO
952-297-8081
kevin.madden@sitelogiq.com

Henry Grek, P.E., CEM, LEED AP
Vice President, Pre-Construction Development
916-570-1014
henry.grek@sitelogiq.com

Eddie Jordan, P.E., Ph.D.
Director, Project Development
916-978-4069
eddie.jordan@sitelogiq.com

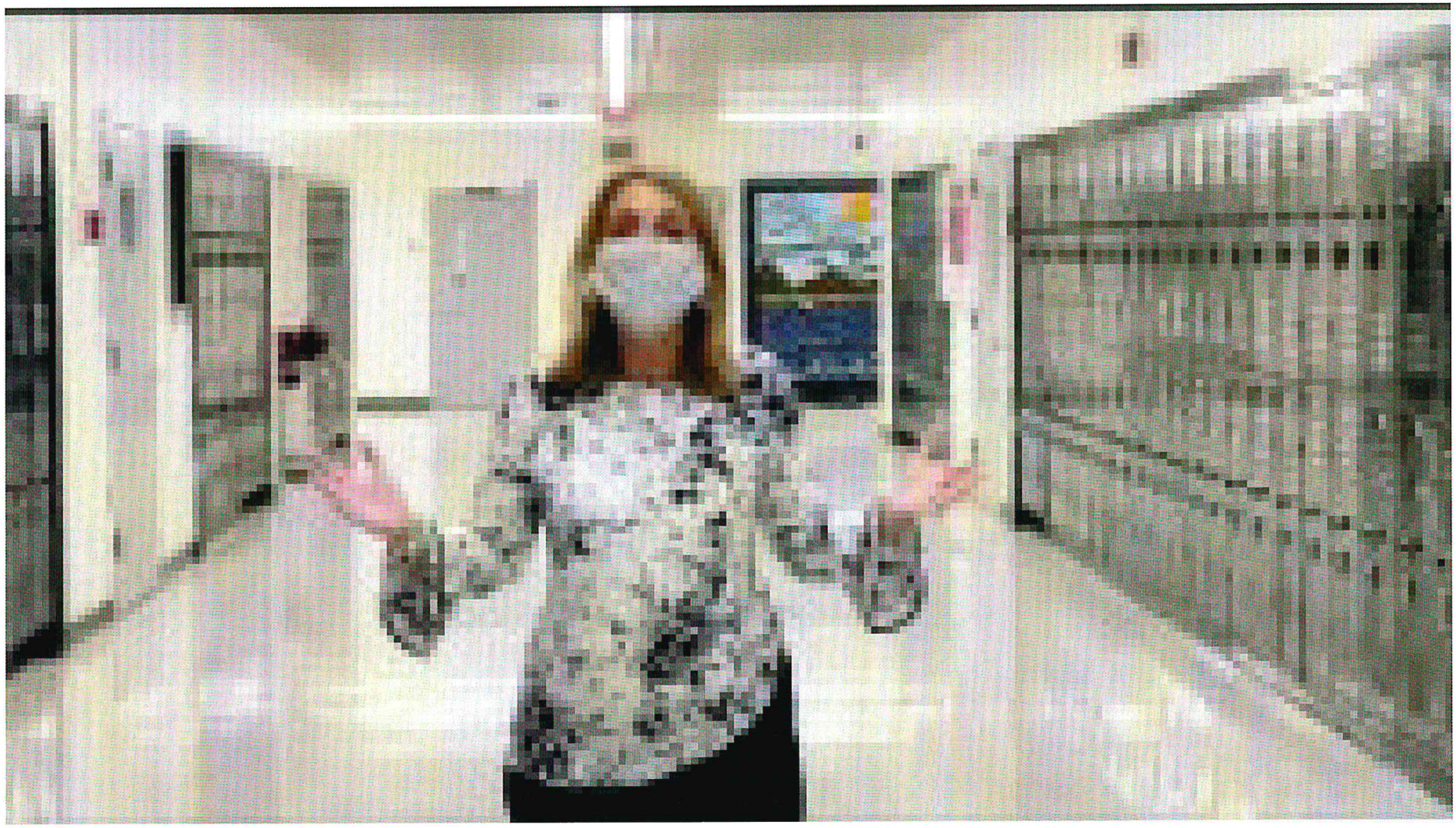
Rebecca Gladden, EIQ
Energy Engineering Supervisor
916-802-7545
rebecca.gladden@sitelogiq.com

Mike Rubino,
Senior Project Manager
916-870-0708
mike.rubino@sitelogiq.com

Kecia Davison,
Vice President of Sales
714-602-1536
Kecia.davison@sitelogiq.com

Agenda

- Introductions & Recap
- District Challenges & Solutions
- Student & Community Engagement
- Phase II
- Construction Schedule
- Financial Solution
- Questions



PROGRAM OVERVIEW

Partnership

ENERGY SAVINGS PAYS FOR THE PROJECT

SAVINGS + SOLUTIONS

$1.4M Annual Savings

Projected Energy Savings from the project

99.4%

Inactivation Rate of SARS-CoV-2 from GPS units installed

82%

Energy Produced onsite used by the District

Improvement

Improvement of indoor and outdoor lighting for students

KEY TAKE AWAYS

Partnership

- Critical Infrastructure Improved
- Budget Neutral Program
- Guaranteed Outcome of Program

Marysville's Challenges & Solutions

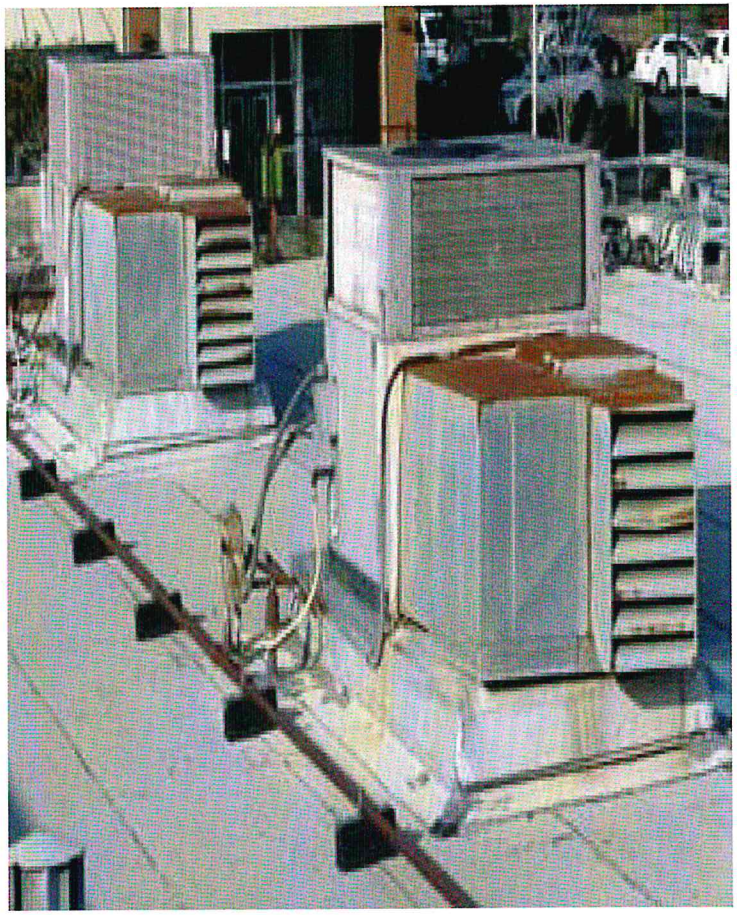
INDOOR AIR QUALITY/HVAC
ENVIRONMENTAL CONTROLS
ENGINEERED INFECTION PROTECTION-COVID MITIGATION
LIGHTING LEVELS
SHADED OUTDOOR AREAS
POWER RELIABILITY, QUALITY AND GENERATION
ENERGY CONSUMPTION

MARYSVILLE CHALLENGES

HVAC

HVAC

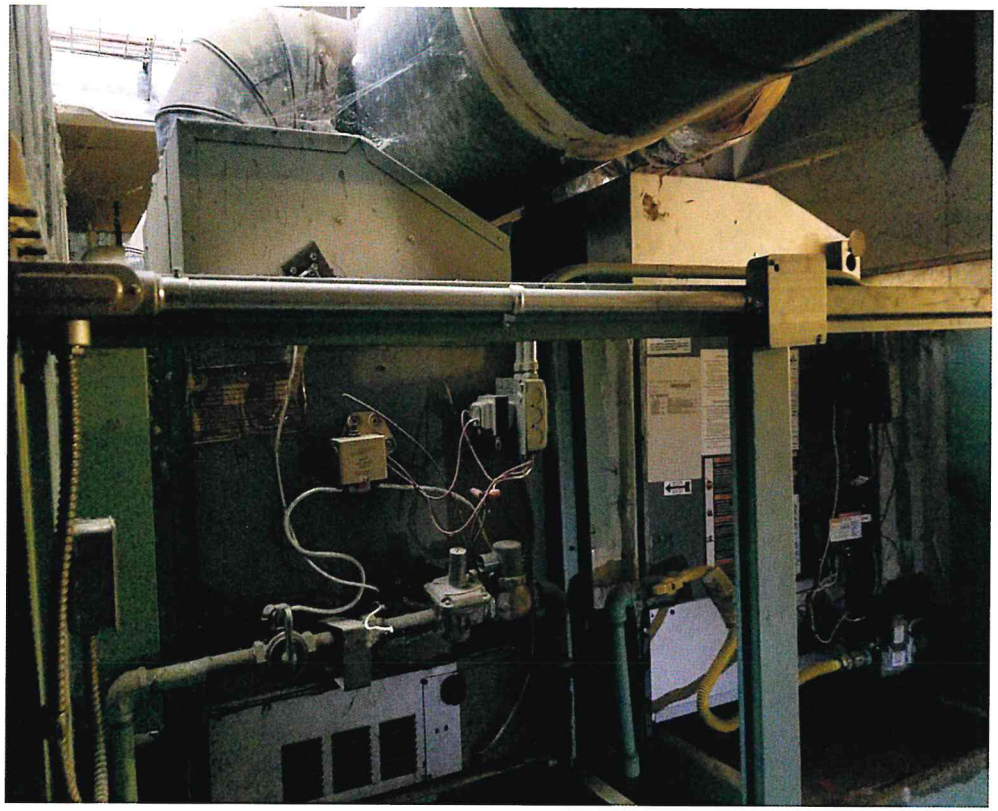
- Equipment is well past useful life.
- Expensive maintenance and repair costs.
- Hot/Cold calls. Employee and student comfort
- Not enough staff to address failures & comfort calls
- Critical Failure at Lindhurst Central Plant
- Unable to Air Balance
- No district wide consistency
- Air Quality Issues
- Inefficient and costly



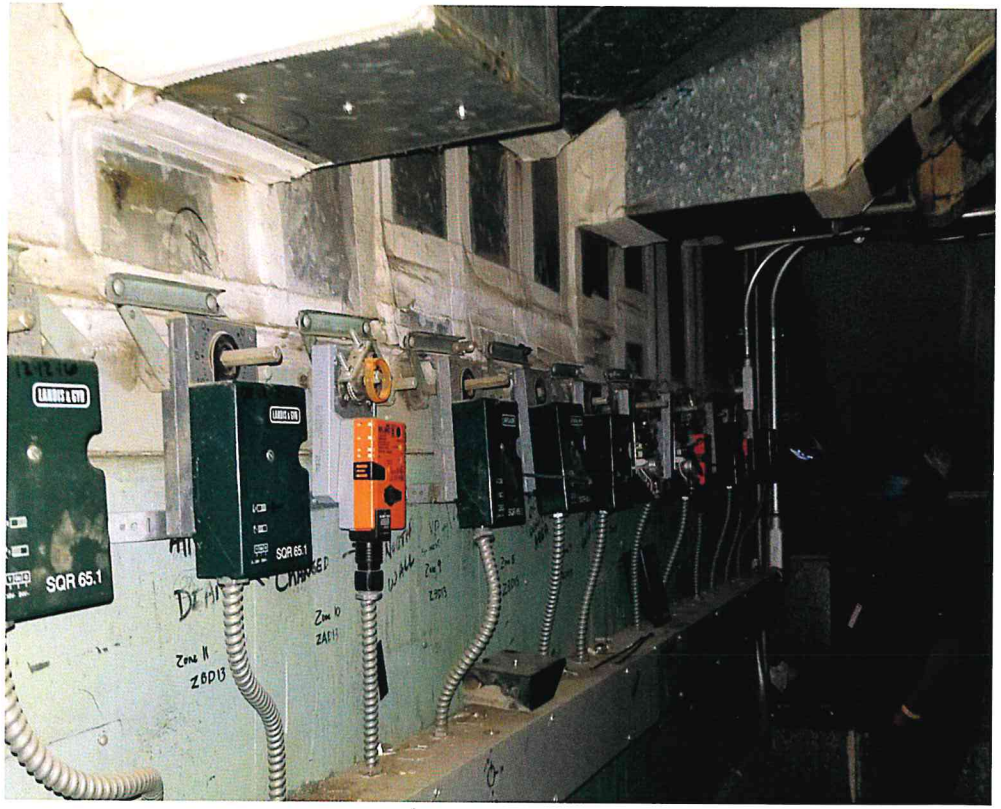
LINDHURST HIGH SCHOOL CHALLENGE

HVAC

AGING CHILLER THAT SERVES ENTIRE CAMPUS



CONSTANT FAILURE



HVAC CHALLENGES DISTRICT WIDE

HVAC

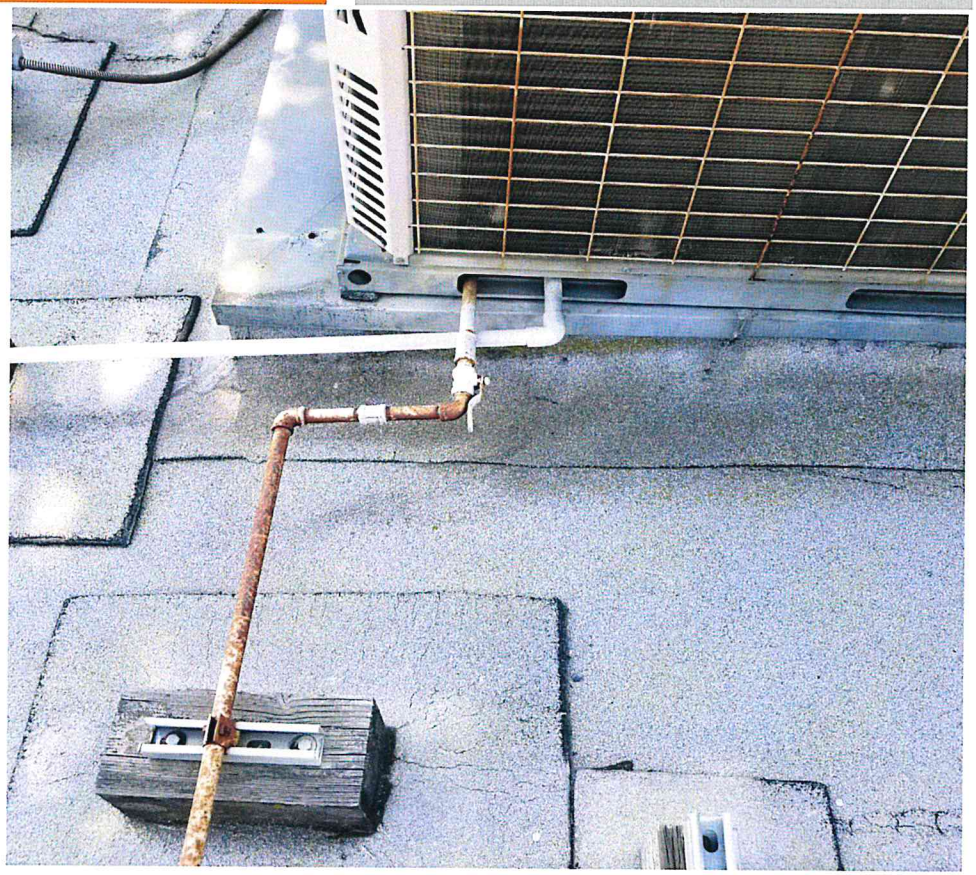
ELLA ELEMENTARY SCHOOL

YUBA GARDENS MIDDLE SCHOOL

HVAC CHALLENGES DISTRICT WIDE

HVAC

CEDAR LANE ELEMENTARY SCHOOL



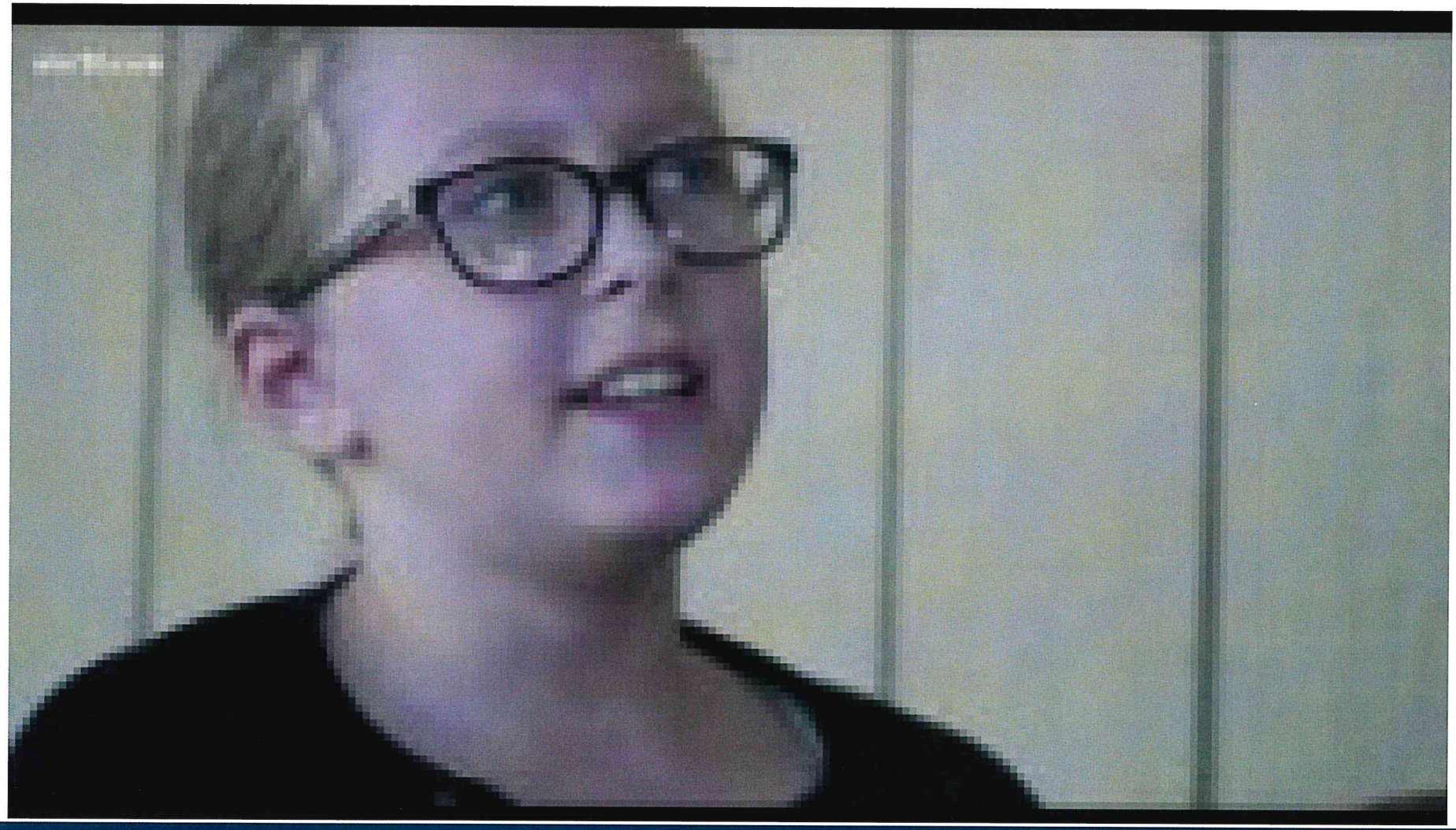
KYNOCH ELEMENTARY SCHOOL

FOOTHILL MIDDLE SCHOOL CHALLENGES

HVAC

POWER OUTAGES

LOST LEARNING

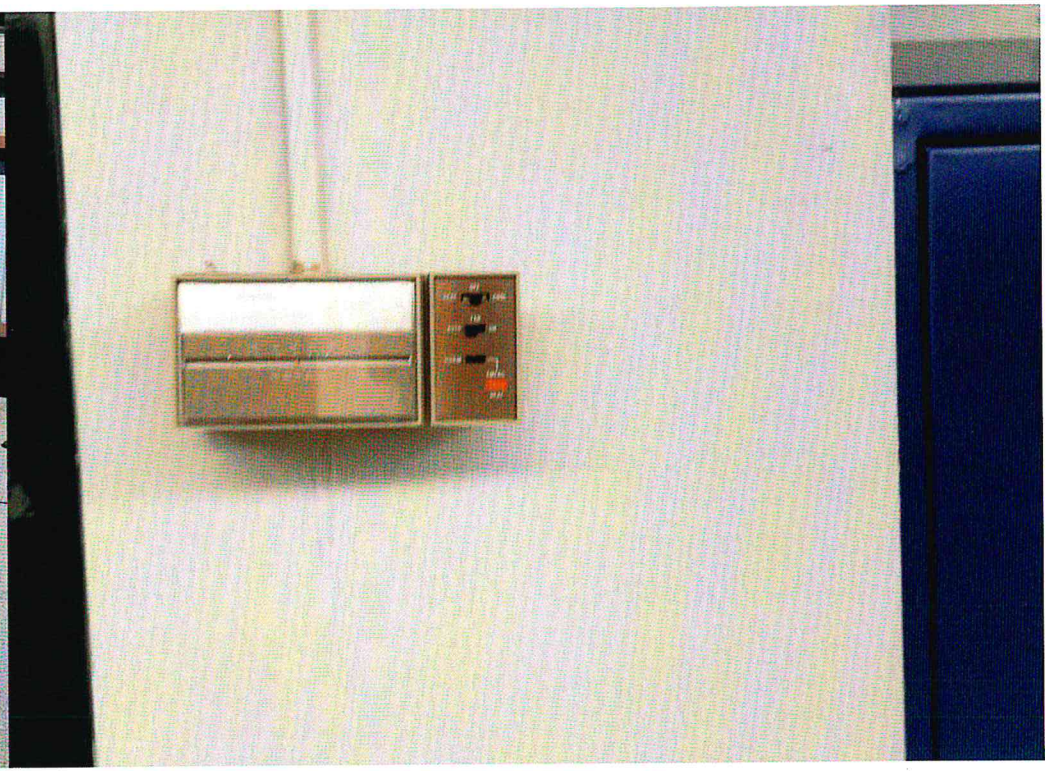


FOOTHILL INTERMEDIATE SCHOOL

HVAC

UNITS PAST LIFE EXPECTANCY

MULTIPLE OUTDATED CONTROLS SYSTEMS



THIS T-STAT HAS MERCURY INSIDE

MARYSVILLE CHALLANGES

Controls

- Antiquated Systems Software
- Inability to perform user functions
- Incorrect equipment scheduling
- Unable to connect to remote monitoring
- Noncompliant CA Title 24 operations
- Inefficient
- No district wide consistency
- Increases operational costs

MARYSVILLE CHALLENGES

Pathogen Mitigation and Air Quality

- 8 MONTHS OF DISTANCE LEARNING
- HIGHER THAN AVERAGE FAILING ACADEMIC GRADES
- HIGHER THAN AVERAGE SCHOOL TRUANCY
- 2 YEARS BEFORE HERD IMMUNITY
- APRIL 2021 BEFORE GENERAL POPULATION VACCINATION
- UNPRECEDENTED WILDFIRES AND SMOKE POLLUTION

MARYSVILLE CHALLENGES

Lighting

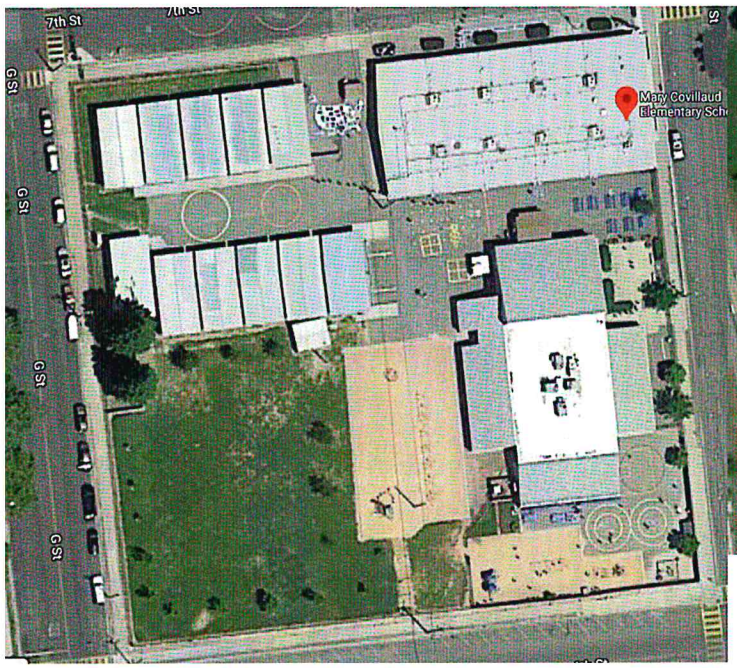
- End of life fixtures and ballasts
- Poor light levels
- High maintenance demand
- Energy Inefficient
- Cost Inefficient
- Campus Safety Issues
- No district wide consistency

MARYSVILLE CHALLANGES

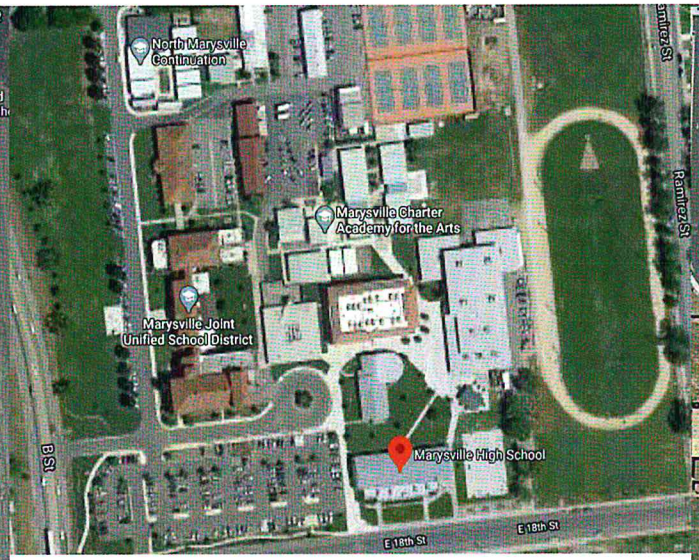
Shade

Shade

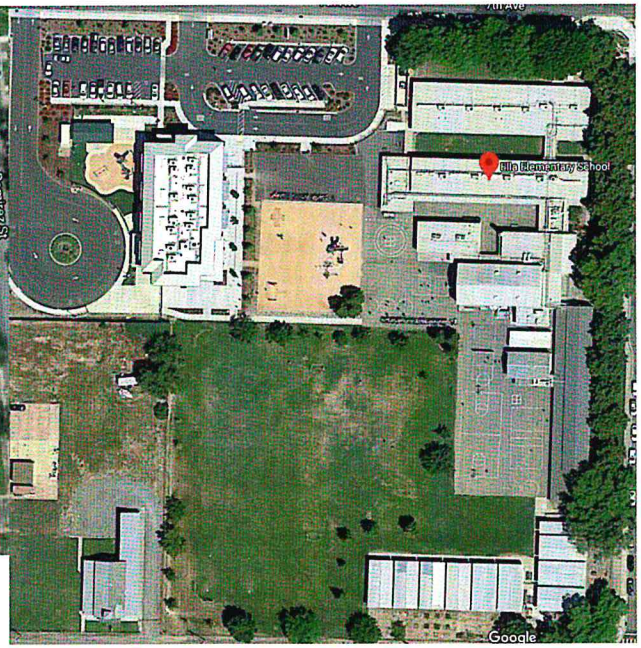
No Natural Shade for outdoor eating, classrooms, play yards or sports fields



Covillaud Elementary



Marysville Charter Academy for the Arts



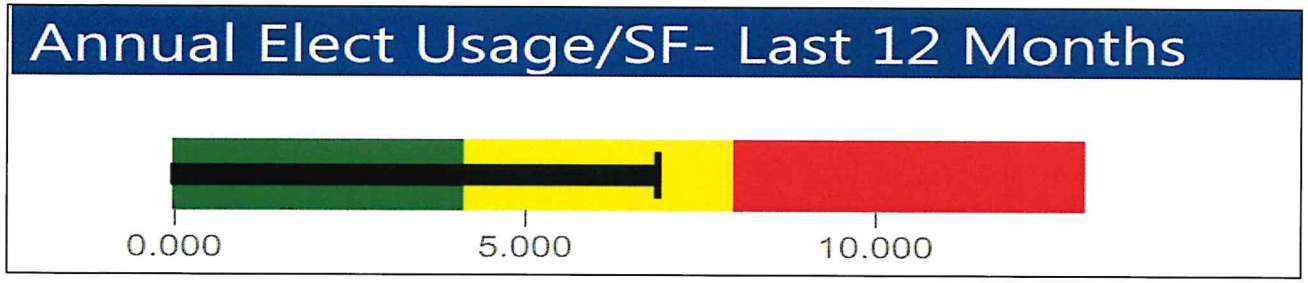
Ella Elementary

MARYSVILLE CHALLANGES

Energy

- District spending $2.4 Million per year to PG&E
- Utility cost escalation is between 6-12% per year.
- No energy management or verification and measurement
- No power generation or energy independence

Marysville Current Average Usage



LINDHURST HIGH SCHOOL SOLUTION

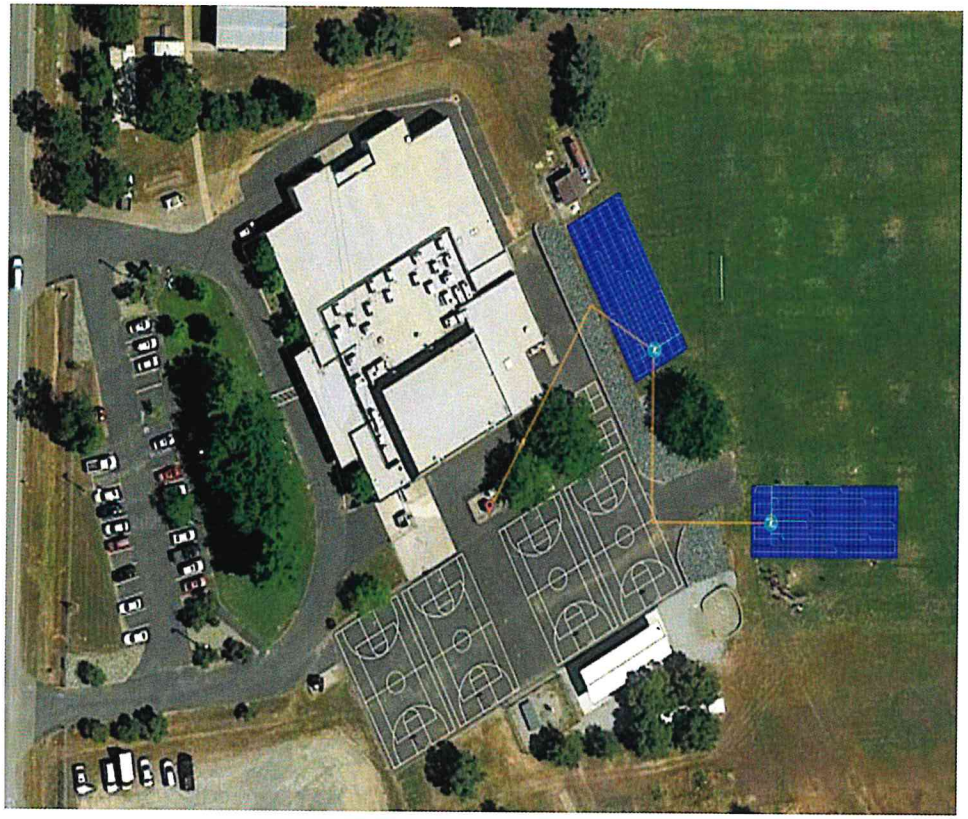
HVAC

In Bldg. E&G DX Cooling Coils

Building A VRF (Variable Refrigerant Flow)

FOOTHILL SOLUTION

Independence from power grid



Battery Storage

CONTROLS SOLUTION

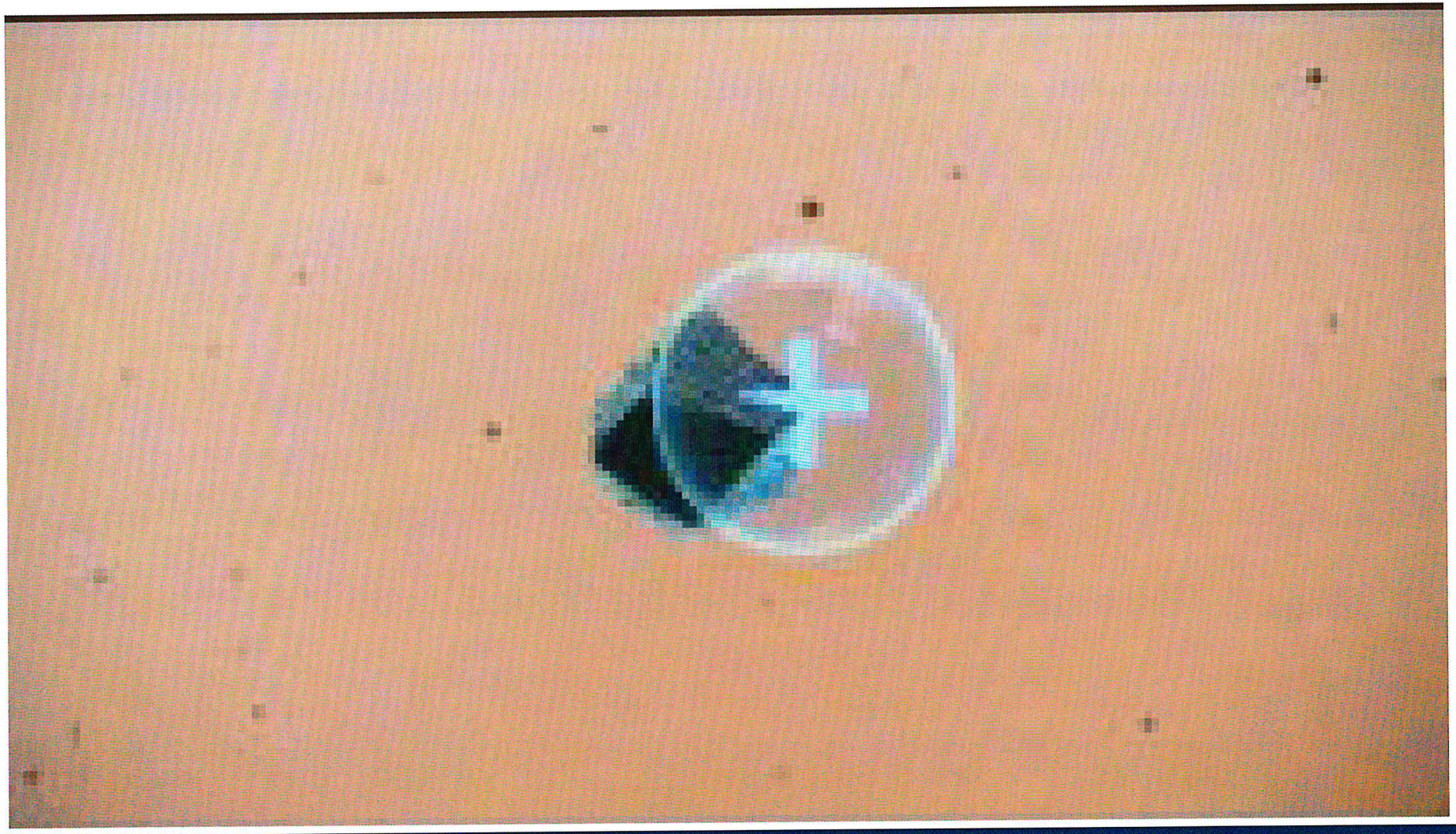
210 Pelican Wireless Thermostat

PATHOGEN SOLUTION

Pathogen Mitigation and Air Quality

99.4% efficient to kill COVID 19

SitelogIQ is donating 100 bi-polar ionization units to MJUSD



HVAC SOLUTION PHASE I

HVAC

- Cedar Lane Elementary School

  Replacement of: (5) Pkg GE units, (10) Split GE, (1) Bard
- Ella Elementary School

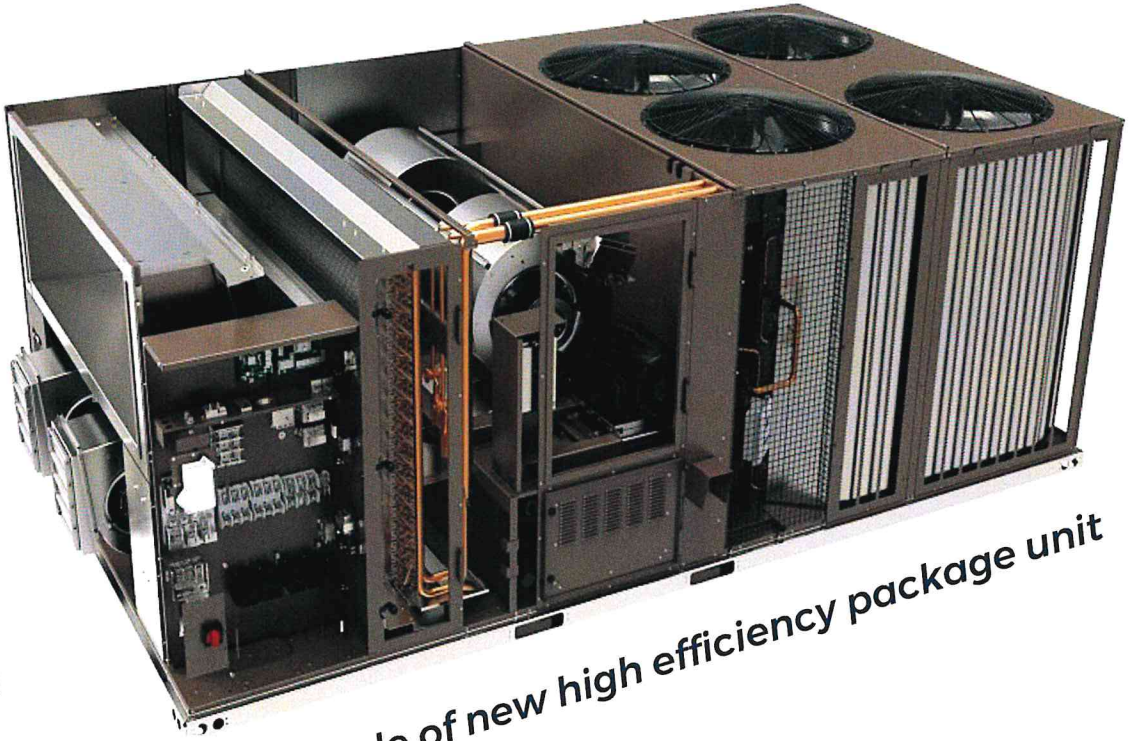
  Replacement of: (8) Pkg GE units, (4) Bard
- Foothill Middle School

  Replacement of: (17) Pkg HP
- Kynoch Elementary School

  Replacement of: (18) Pkg GE units, (1) Split HP, (6) Bard
- Yuba Feather Elementary School

  Replacement of: (4) Pkg GE units, (2) Bard
- Yuba Gardens Middle School

  Replacement of: (5) Pkg GE units, (10) Split GE, (1) Bard
- Lindhurst High School

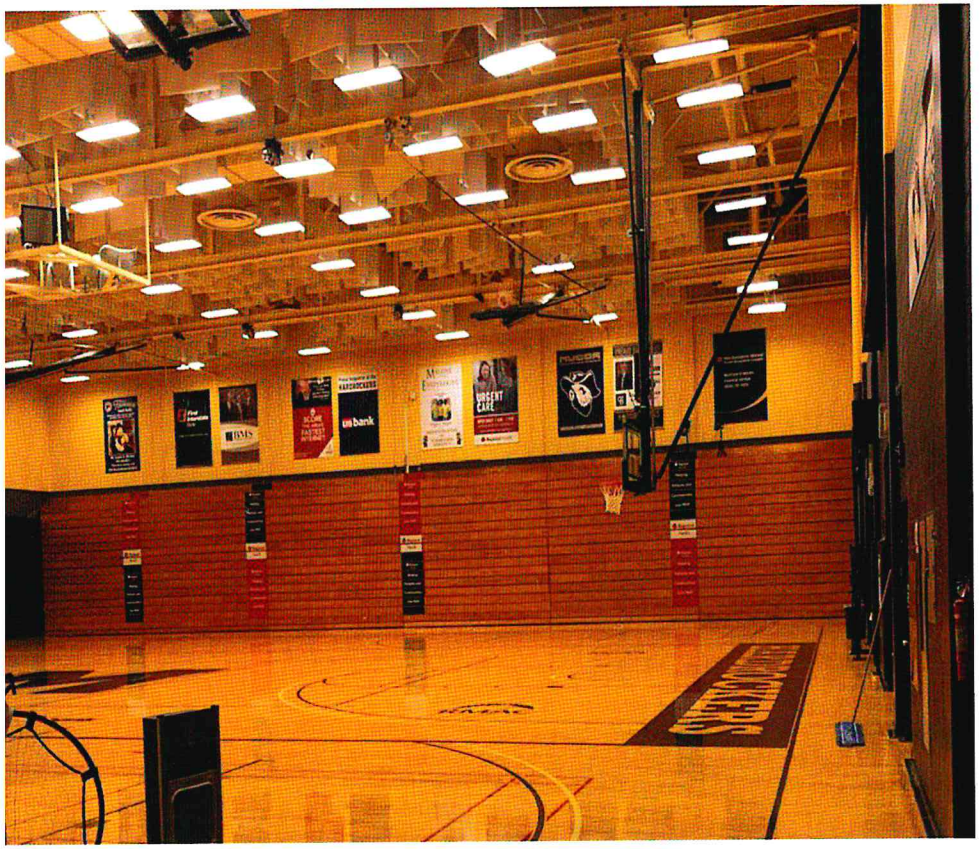


Example of new high efficiency package unit

LIGHTING SOLUTION

Lighting

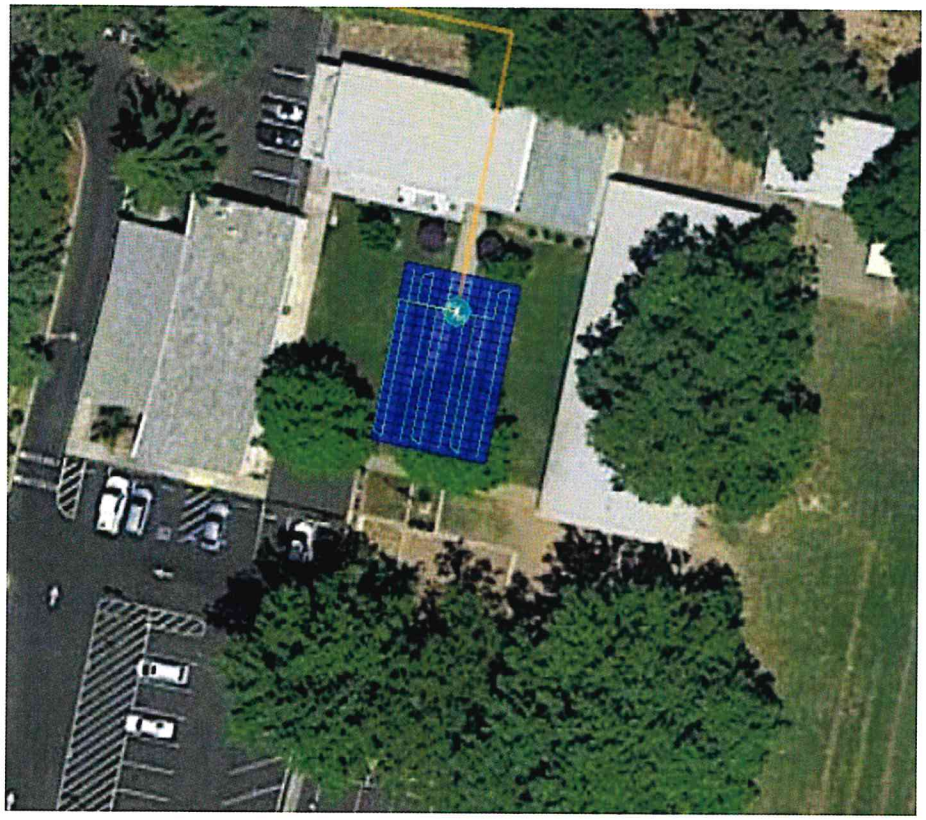
BEFORE



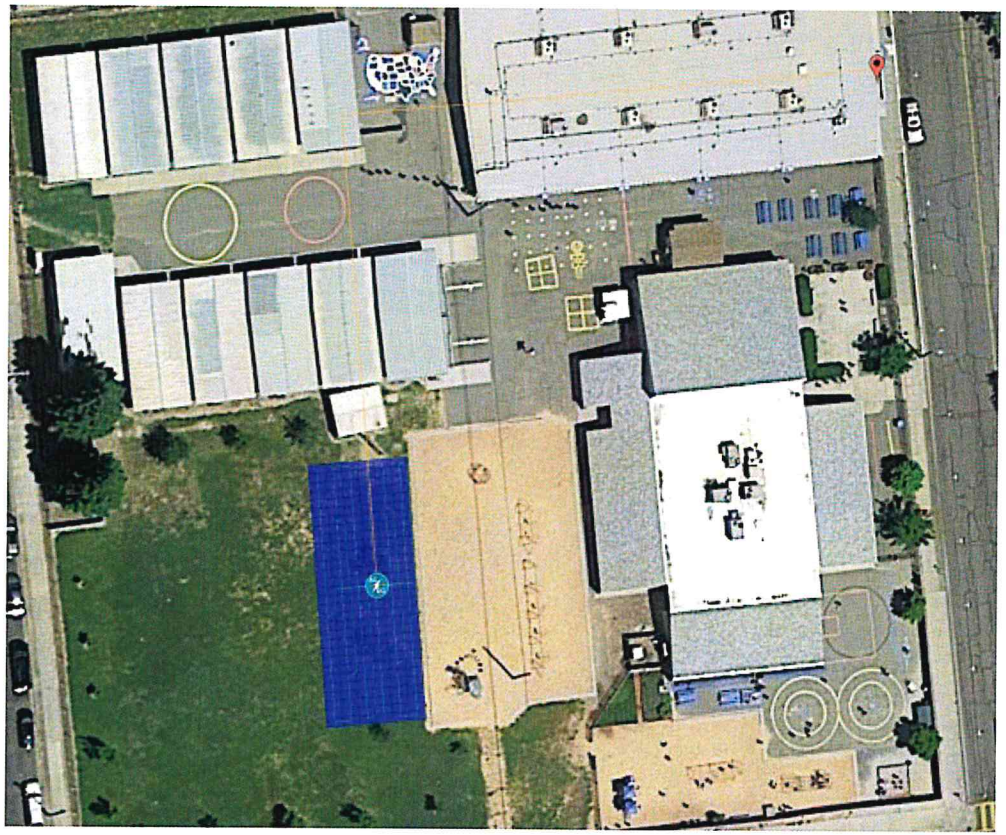
AFTER

SHADED OUTDOOR AREAS

Shade



CORDUA



COVILLAUD

POWER GENERATION & ENERGY SOLUTION

Energy

82% of the District's electricity will be produced through solar power

Savings of $1.2 M annually

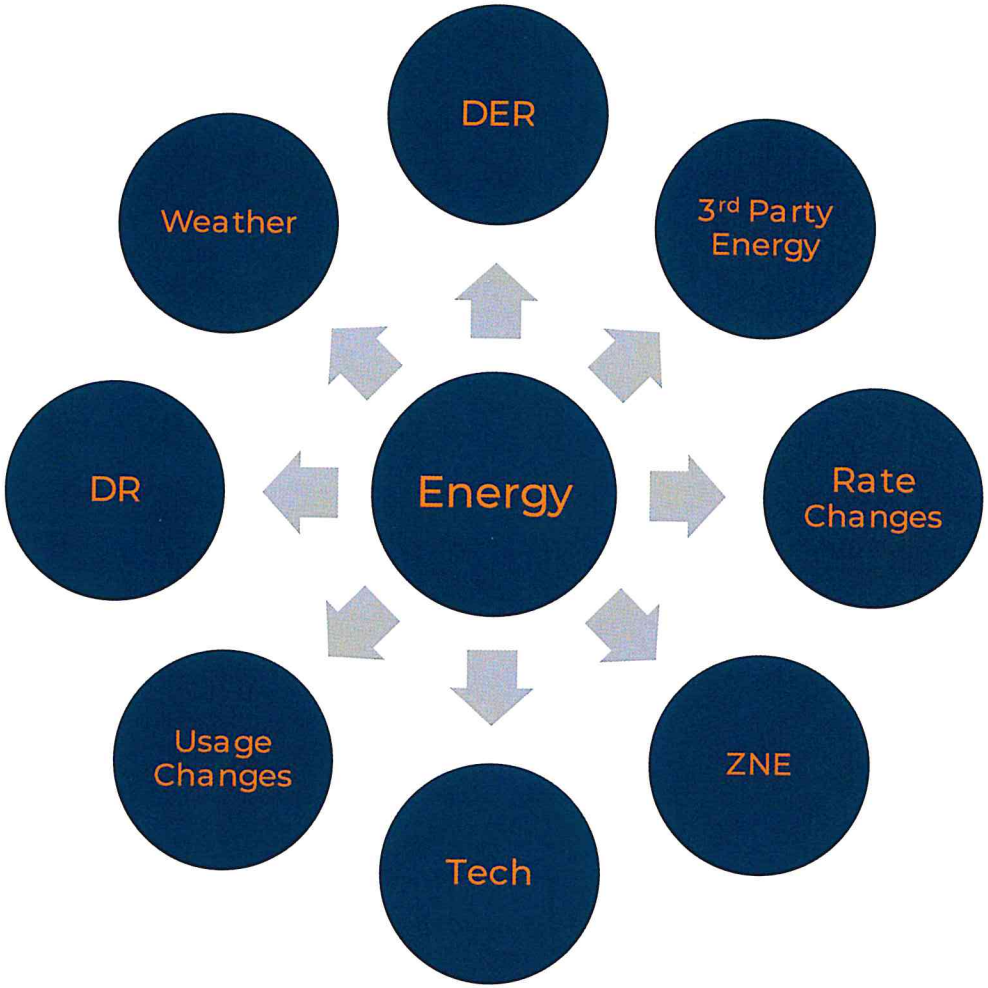
- Browns Valley Elementary
- Cedar Lane Elementary
- Cordua Elementary
- Covillaud Elementary
- Edgewater Elementary
- Ella Elementary
- Foothill Intermediate
- Johnson Park Elementary
- Kynoch Elementary
- Linda Elementary
- Lindhurst High School
- McKenny Intermediate
- Olivehurst Elementary
- Yuba Gardens Intermediate
- Marysville High School,
- Comm. Day
- Independent Study
- MCAA

WHY MJUSD NEEDS ENERGY MANAGEMENT

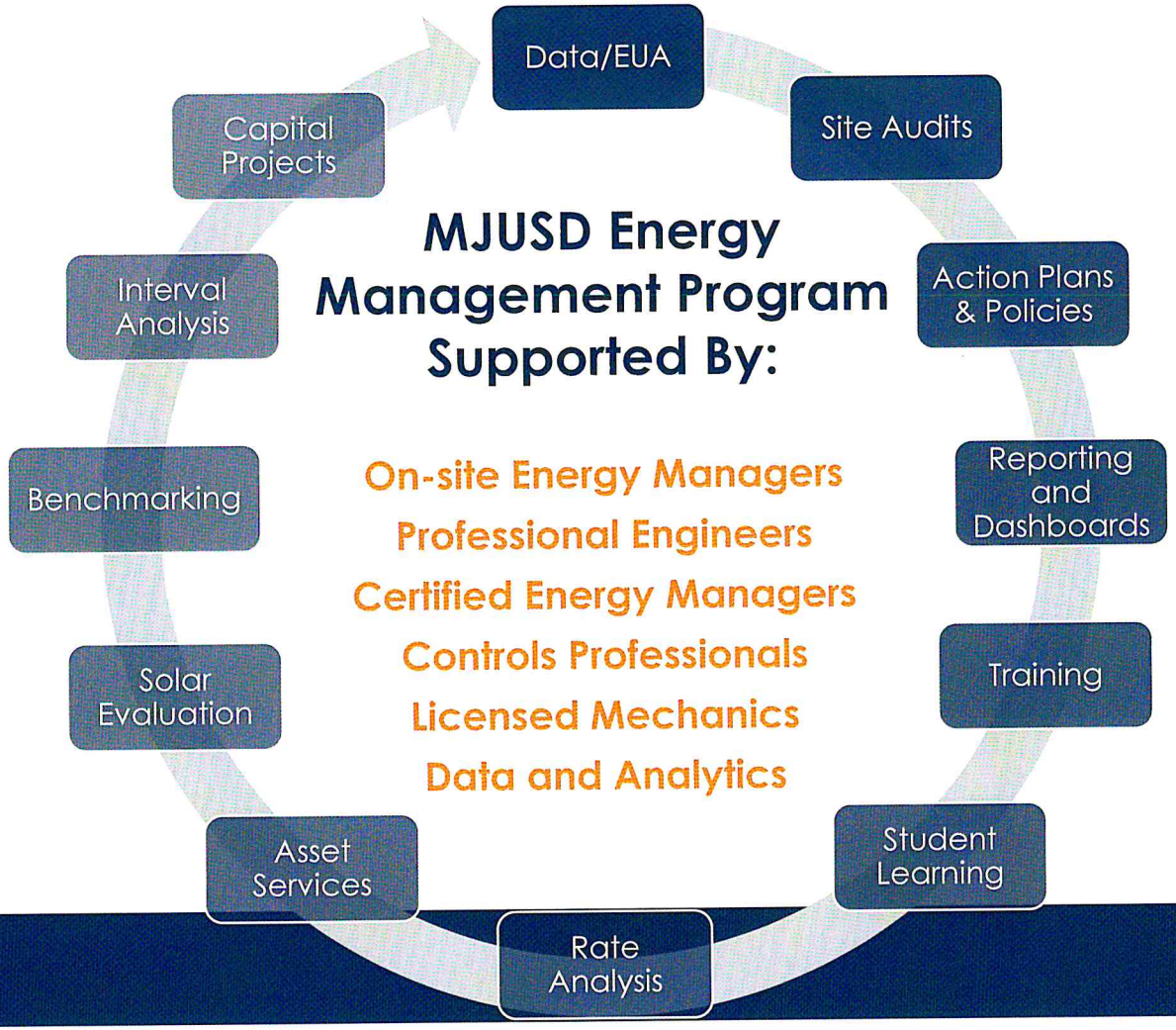
ENERGY IS GETTING COMPLICATED AND EXPENSIVE!

"50 percent of initial energy savings disappear within the first six to 12 months due to a lack of continuous monitoring, analysis and corrective action."
- Accenture Study

Districts that embrace continuous monitoring and active energy management practices can achieve 15 to 40 percent energy savings.
- Analysis from the U.S. Department of Energy



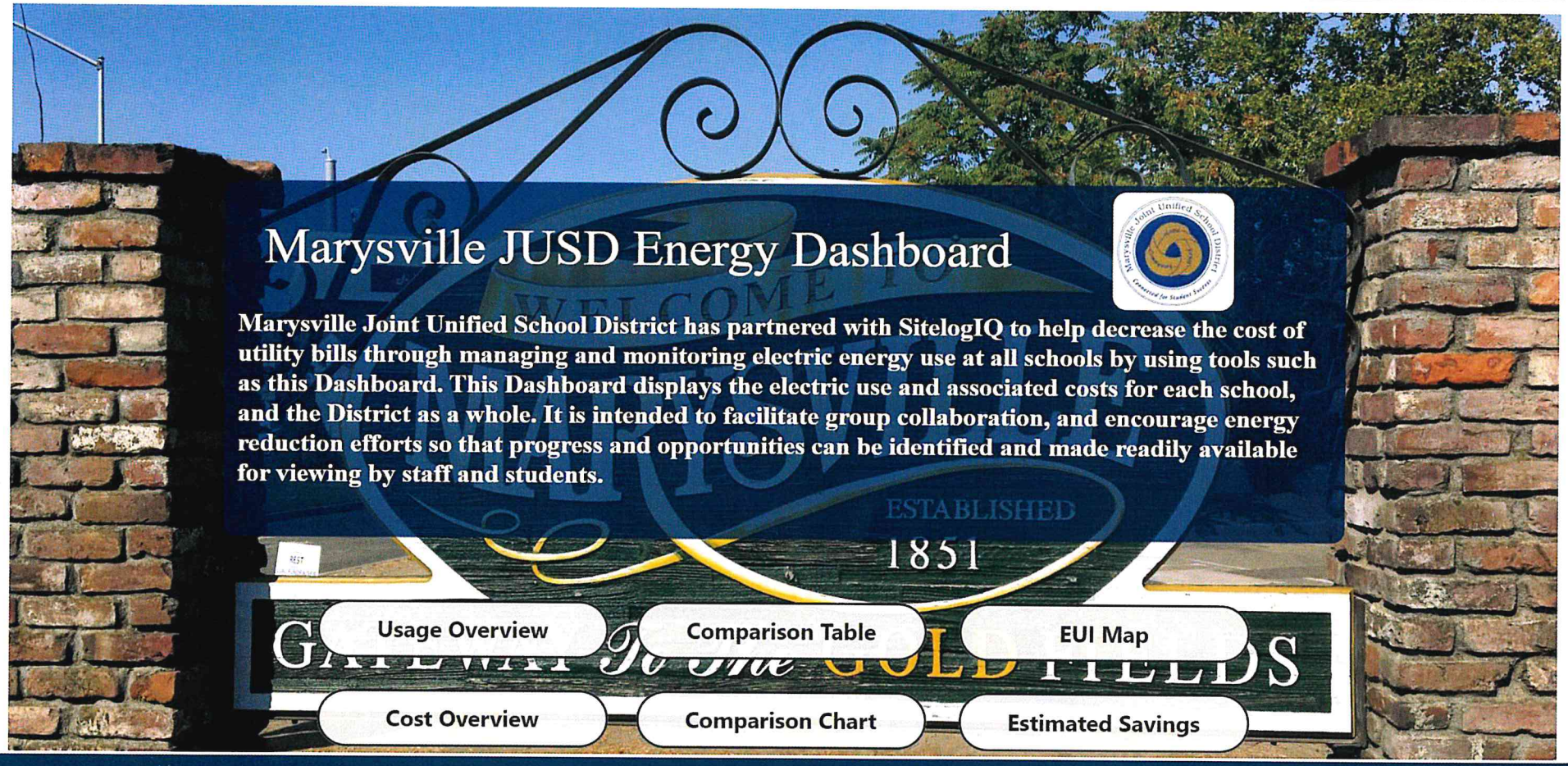
OUR ENERGY MANAGEMENT FOCUS



ENERGY MANAGEMENT SOLUTION

Marysville JUSD Energy Dashboard

Energy



Marysville JUSD Energy Dashboard

Marysville Joint Unified School District has partnered with SitelogIQ to help decrease the cost of utility bills through managing and monitoring electric energy use at all schools by using tools such as this Dashboard. This Dashboard displays the electric use and associated costs for each school, and the District as a whole. It is intended to facilitate group collaboration, and encourage energy reduction efforts so that progress and opportunities can be identified and made readily available for viewing by staff and students.

- Usage Overview
- Comparison Table
- EUI Map
- Cost Overview
- Comparison Chart
- Estimated Savings

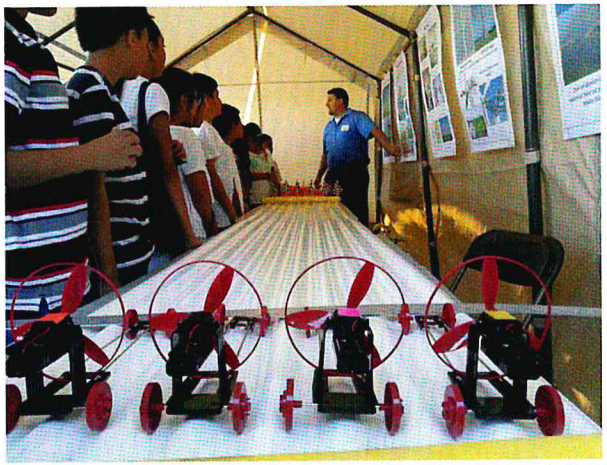
STUDENT ENGAGEMENT

Energy

Student Education

SitelogIQ is pleased to offer remote and on-site educational lessons for your K-12 students that emphasize STEM based curriculum and concentrate on energy related topics such as:

- Energy Technologies and Careers
- Energy Management and Conservation
- Solar Energy and Renewables
- Energy Monitoring and Analysis
- Energy Storage
- Energy Resources and Environmental Impact
- Recycling and Waste Management



COMMUNITY ENGAGEMENT

Community

PROJECT EXECUTION SCHEDULE

Partnership

CONTRACT EXECUTION 1/26/21

NOTICE TO PROCEED 2/2021

Construction Mobilization, Ionization, Lighting Mechanical – Spring 2021

Construction Mobilization Lindhurst Mechanical – Late Spring/**Summer 2021

Construction Mobilization Solar – Late Summer/Fall 2021

Foothill MS Battery Storage

Close Out 2022

**CRITICAL FOR NTP IN FEB 2021 IN ORDER TO START ON LHS OVER SUMMER


FINANCIAL SOLUTIONS

CUMULATIVE SAVINGS FROM ENERGY PROGRAM

Partnership

MARYSVILLE JOINT UNIFIED SCHOOL DISTRICT SAVES DISTRICT OVER $40 MILLION

FUND PHASE II NOW?

$ Financing

Use remaining $9 million in services as Opportunity to Fund Additional Critical Infrastructure Upgrades like HVAC and Controls

$ Financing

Procurement Support

- $500K grant for battery storage
- AB841
- Remaining Prop 39 Funds of $200K

SCOPE: PHASE I PROJECT SCOPE

Scope: Phase 1 Project Scope (@ $25.9MM,)

Year	Annual COP Finance Payment[3]	Solar O&M Service & Energy Dashboard	Avoided Cost & Maintenance Savings	Prop 39 and SGIP Contribution	Project Savings	Annual Savings	Cumulative Savings	Payment Date
0	$ -	$ -	$ 108,237	$ 315,000	$ 361,334	$ 784,571	$ 784,571	6/1/2021
1	$ 1,288,300	$ 207,885	$ 432,946	$ 21,000	$ 1,497,369	$ 455,130	$ 1,239,701	6/1/2022
2	$ 1,449,600	$ 214,122	$ 445,934	$ 21,000	$ 1,551,274	$ 354,487	$ 1,594,188	6/1/2023
3	$ 1,504,400	$ 220,545	$ 459,312	$ 21,000	$ 1,607,120	$ 362,488	$ 1,956,676	6/1/2024
4	$ 1,556,200	$ 227,162	$ 473,092	$ 21,000	$ 1,664,977	$ 375,707	$ 2,332,383	6/1/2025
5	$ 1,610,000	$ 233,976	$ 487,285	$ 21,000	$ 1,724,916	$ 389,224	$ 2,721,606	6/1/2026
6	$ 1,625,600	$ 240,996	$ 450,420		$ 1,787,013	$ 370,837	$ 3,092,443	6/1/2027
7	$ 1,684,400	$ 248,226	$ 463,932		$ 1,851,345	$ 382,652	$ 3,475,095	6/1/2028
8	$ 1,744,600	$ 255,672	$ 477,850		$ 1,917,994	$ 395,572	$ 3,870,667	6/1/2029
9	$ 1,806,000	$ 263,342	$ 492,186		$ 1,987,041	$ 409,885	$ 4,280,551	6/1/2030
10	$ 1,868,400	$ 271,243	$ 506,951		$ 2,058,575	$ 425,883	$ 4,706,435	6/1/2031
11	$ 1,936,600	$ 279,380	$ 522,160		$ 2,132,684	$ 438,863	$ 5,145,298	6/1/2032
12	$ 2,005,200	$ 287,761	$ 537,825		$ 2,209,460	$ 454,323	$ 5,599,622	6/1/2033
13	$ 2,074,000	$ 296,394	$ 553,959		$ 2,289,001	$ 472,566	$ 6,072,188	6/1/2034
14	$ 2,147,800	$ 305,286	$ 570,578		$ 2,371,405	$ 488,897	$ 6,561,085	6/1/2035
15	$ 2,226,200	$ 314,445	$ 587,696		$ 2,456,775	$ 503,826	$ 7,064,911	6/1/2036
16	$ 1,798,800	$ 323,878	$ -		$ 2,545,219	$ 422,541	$ 7,487,452	6/1/2037
17	$ 1,865,600	$ 333,594	$ -		$ 2,636,847	$ 437,653	$ 7,925,105	6/1/2038
18	$ 1,932,400	$ 343,602	$ -		$ 2,731,774	$ 455,771	$ 8,380,876	6/1/2039
19	$ 2,004,000	$ 353,910	$ -		$ 2,830,118	$ 472,207	$ 8,853,084	6/1/2040
20	$ 2,080,000	$ 364,528	$ -		$ 2,932,002	$ 487,474	$ 9,340,558	6/1/2041
21		$ 375,463	$ -		$ 3,037,554	$ 2,662,090	$ 12,002,648	
22		$ 386,727	$ -		$ 3,146,906	$ 2,760,178	$ 14,762,827	
23		$ 398,329	$ -		$ 3,260,194	$ 2,861,865	$ 17,624,692	
24		$ 410,279	$ -		$ 3,377,561	$ 2,967,282	$ 20,591,974	
25		$ 422,587	$ -		$ 3,499,154	$ 3,076,566	$ 23,668,540	
26		$ 435,265	$ -		$ 3,625,123	$ 3,189,858	$ 26,858,398	
27		$ 448,323	$ -		$ 3,755,628	$ 3,307,305	$ 30,165,703	
28		$ 461,773	$ -		$ 3,890,830	$ 3,429,057	$ 33,594,761	
29		$ 475,626	$ -		$ 4,030,900	$ 3,555,274	$ 37,150,035	
30		$ 489,895	$ -		$ 4,176,012	$ 3,686,118	$ 40,836,153	
Totals	$ 36,208,100	$ 9,890,215	$ 7,570,363	$ 420,000	$ 78,944,105	$ 40,836,153	$ 40,836,153	

SCOPE: FULL PROJECT SCOPE (PHASE I AND PHASE II)

Scope: Full Project Scope (Phase 1 @ $25.9MM, Phase 2 @ $9MM)

Year	Annual COP Finance Payment[3]	Solar O&M Service & Energy Dashboard	Avoided Cost & Maintenance Savings	Prop 39, SGIP, & AB841 Contribution	Project Savings	Annual Savings	Cumulative Savings	Payment Date
0	$ -	$ -	$ 191,570	$ 900,000	$ 398,834	$ 1,490,404	$ 1,490,404	6/1/2021
1	$ 1,455,000	$ 207,885	$ 766,279	$ 50,000	$ 1,652,769	$ 806,163	$ 2,296,568	6/1/2022
2	$ 2,018,000	$ 214,122	$ 789,268	$ 50,000	$ 1,712,269	$ 319,415	$ 2,615,983	6/1/2023
3	$ 2,088,400	$ 220,545	$ 812,946	$ 50,000	$ 1,773,910	$ 327,911	$ 2,943,894	6/1/2024
4	$ 2,159,800	$ 227,162	$ 837,334	$ 50,000	$ 1,837,771	$ 338,144	$ 3,282,037	6/1/2025
5	$ 2,237,000	$ 233,976	$ 862,454	$ 50,000	$ 1,903,931	$ 345,409	$ 3,627,446	6/1/2026
6	$ 2,269,600	$ 240,996	$ 836,844		$ 1,972,473	$ 298,721	$ 3,926,167	6/1/2027
7	$ 2,344,200	$ 248,226	$ 861,950		$ 2,043,482	$ 313,006	$ 4,239,173	6/1/2028
8	$ 2,429,000	$ 255,672	$ 887,808		$ 2,117,047	$ 320,183	$ 4,559,356	6/1/2029
9	$ 2,513,400	$ 263,342	$ 914,442		$ 2,193,261	$ 330,961	$ 4,890,317	6/1/2030
10	$ 2,597,200	$ 271,243	$ 941,876		$ 2,272,218	$ 345,651	$ 5,235,968	6/1/2031
11	$ 2,690,200	$ 279,380	$ 970,132		$ 2,354,018	$ 354,570	$ 5,590,537	6/1/2032
12	$ 2,781,800	$ 287,761	$ 999,236		$ 2,438,762	$ 368,437	$ 5,958,974	6/1/2033
13	$ 2,876,800	$ 296,394	$ 1,029,213		$ 2,526,558	$ 382,577	$ 6,341,551	6/1/2034
14	$ 2,979,800	$ 305,286	$ 1,060,089		$ 2,617,514	$ 392,517	$ 6,734,068	6/1/2035
15	$ 3,080,200	$ 314,445	$ 1,091,892		$ 2,711,745	$ 408,992	$ 7,143,060	6/1/2036
16	$ 2,182,800	$ 323,878	$ -		$ 2,809,367	$ 302,689	$ 7,445,750	6/1/2037
17	$ 2,267,200	$ 333,594	$ -		$ 2,910,505	$ 309,710	$ 7,755,460	6/1/2038
18	$ 2,350,400	$ 343,602	$ -		$ 3,015,283	$ 321,280	$ 8,076,740	6/1/2039
19	$ 2,437,200	$ 353,910	$ -		$ 3,123,833	$ 332,723	$ 8,409,463	6/1/2040
20	$ 2,527,200	$ 364,528	$ -		$ 3,236,291	$ 344,563	$ 8,754,026	6/1/2041
21		$ 375,463	$ -		$ 3,352,797	$ 2,977,334	$ 11,731,360	
22		$ 386,727	$ -		$ 3,473,498	$ 3,086,771	$ 14,818,131	
23		$ 398,329	$ -		$ 3,598,544	$ 3,200,215	$ 18,018,345	
24		$ 410,279	$ -		$ 3,728,092	$ 3,317,813	$ 21,336,158	
25		$ 422,587	$ -		$ 3,862,303	$ 3,439,715	$ 24,775,873	
26		$ 435,265	$ -		$ 4,001,346	$ 3,566,081	$ 28,341,954	
27		$ 448,323	$ -		$ 4,145,394	$ 3,697,071	$ 32,039,025	
28		$ 461,773	$ -		$ 4,294,628	$ 3,832,856	$ 35,871,881	
29		$ 475,626	$ -		$ 4,449,235	$ 3,973,609	$ 39,845,490	
30		$ 489,895	$ -		$ 4,609,407	$ 4,119,513	$ 43,965,003	
Totals	**$ 48,285,200**	**$ 9,890,215**	**$ 13,853,334**	**$ 1,150,000**	**$ 87,137,084**	**$ 43,965,003**	**$ 43,965,003**	

PROGRAM SUMMARY

	MJUSD Sites		District Office	Arboga Elementary	Browns Valley Elementary	Cedar Lane Elementary	Cordua Elementary	Covillaud Elementary	Dobbins Elementary	Edgewater Elementary	Ella Elementary	Foothill Intermediate	Johnson Park Elementary	Kynoch Elementary	Linda Elementary	Lindhurst High School	South Lindhurst Cont. High	Loma Rica Elementary	McKenny Intermediate	Olivehurst Elementary	Yuba Feather Elementary	Yuba Gardens Intermediate	Marysville HS	Community Day	Independent Study	Marysville Charter Academy
Phase I	**Enhanced Lighting**	**20**	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X		X	X		X	X	
	Upgraded Heating, Ventaliation, & Cooling	**7**				X					X	X		X		X					X	X				
	Onsite Renewable Generation	**19**	X		X	X	X	X		X	X	X	X	X	X	X			X	X		X	X	X	X	X
	Battery Energy Storage	**2**										X														
	Engineered Infection Protection	**24**	1410 units District wide																							
Phase II	**Updated Controls**	**24**	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	Upgraded Heating, Ventaliation, & Cooling	**TBD**																								
	Onsite Renewable Generation	**5**		X					X								X	X			X					
	Battery Energy Storage	**2**													X	X										
	Master Facility Planning		District Wide Plan																							

COP FINANCING

Partnership

- The District would finance the proposed project through a certificates of participation financing (COPs).
- The process would be similar to the recent refunding COPs transaction completed in October.
  - The District would lease an asset to the Marysville JUSD Financing Corporation, which then leases that same asset back to the District. The Corporation serves as the intermediary between the District and investors, who provide project funds to the District.
  - The District receives upfront proceeds for projects and then makes lease payments in the same amount as the debt service payments to the investors.
- Interest rates continue to remain near their all-time lows. The Bond Buyer GO Bond index, which represents general bond borrowing costs, is currently at 2.12% , or <u>over 2% less than its long-term average of 4.18% .</u>
- Projected energy cost savings are expected to more than offset annual COPs payments.
- For the COPs financing, the Board will be asked to approve the following legal documents:
  - Preliminary Official Statement; Lease Agreement; Ground Lease; Trust Agreement; Assignment Agreement; Continuing Disclosure Certificate

TIMELINE

Partnership

Task	Responsible Party	Date
Kick-off financing	District/Financial Advisor	Early January
Distribute draft financing legal documents	Special Counsel	Mid-January
Conference call with S&P Global Ratings	District/Financial Advisor	Mid-January
Receive credit rating	District/Financial Advisor	Mid-January
Board approves Refunding COPs financing	District	January 26
Distribute Preliminary Official Statement to investors	District/Special Counsel	February 1
Sell Refunding COPs; set interest rates	Finance Team	Wk. of Feb. 8
Close COPs financing	Finance Team	Wk. of Feb. 22

Preliminary; subject to change.

KEY TAKE AWAYS

Partnership

- Critical Infrastructure Improved
- Budget Neutral Program
- Guaranteed Outcome of Program

NEXT STEPS

Partnership

- Board of Trustee Workshop January 12th, 2021
- Final Contract Documents for Board Packet on January 20th, 2021
- Financing Approval January 26th, 2021
- Board of Trustee approval of Energy Services Agreement January 26th, 2021
- Notice to Proceed from February 2021
- Funding February 2021
- Implementation February 2021

IN CLOSING

WE ARE GOING TO SPEND THE NEXT 30 YEARS PROTECTING YOUR INVESTMENT

- Energy Manager (both remote and onsite)
- Energy Advocate ensuring you are on the right programs
- Providing maintenance and monitoring for your solar system
- Performing measurement and verification operations and solutions
- Identifying additional grants and funding resources
- Supporting your school community

Partnership

- Student Engagement
- Student Learning
- Careers in Energy
- STEAM/CTE/ROP

Questions