



Superintendent's Facilities Advisory Committee

Energy and Sustainability Program Update

March 18, 2026



WELCOME AND REVIEW OF COMMITTEE NORMS

- ❑ Remember the committee serves in an advisory role to inform staff and Board recommendations.
- ❑ Listen respectfully and allow space for different perspectives.
- ❑ Focus on Districtwide needs rather than individual sites.
- ❑ Ask questions and raise concerns to help improve the work.
- ❑ Keep discussion constructive and solution-oriented.

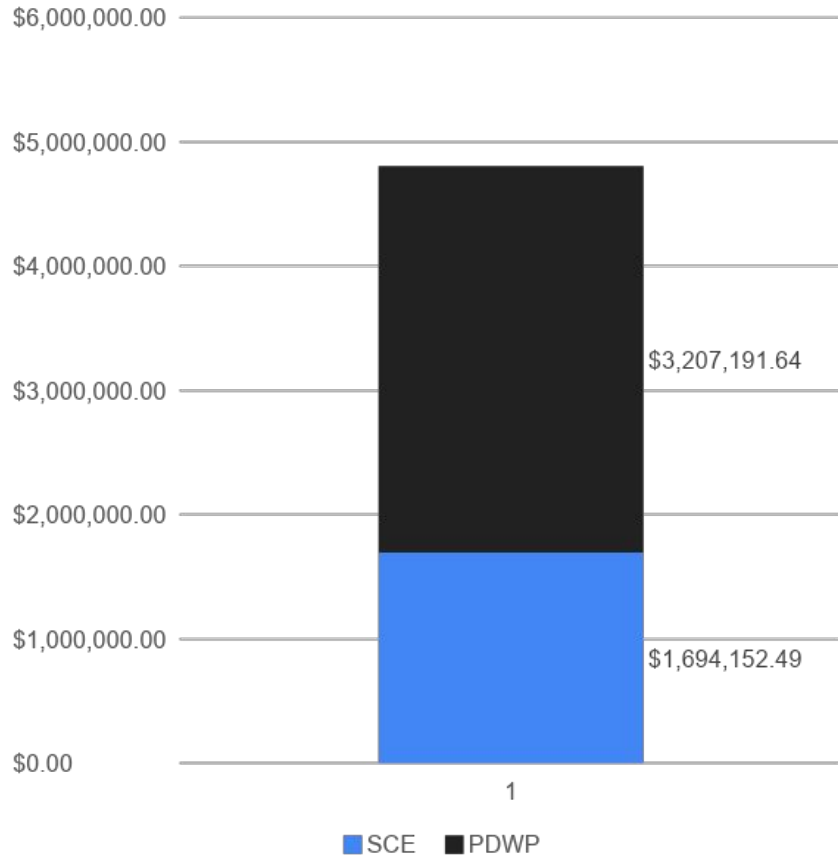
Outline

- Overview of District Energy Cost – 2023 & 2024
- Overview of Existing Luminace Solar Sites - 2024
 - Performance & Savings
- Energy & Sustainability Program Moving Forward
 - Technologies – Solar, Battery Storage, Electric Charging Stations, Energy Efficiency
 - New Solar Site Consideration / Program Scope
 - Program Budget / Potential Savings
 - Proposed Timelines & Next Steps



Overview of District Energy Cost - 2023

PUSD 2023 Energy Cost

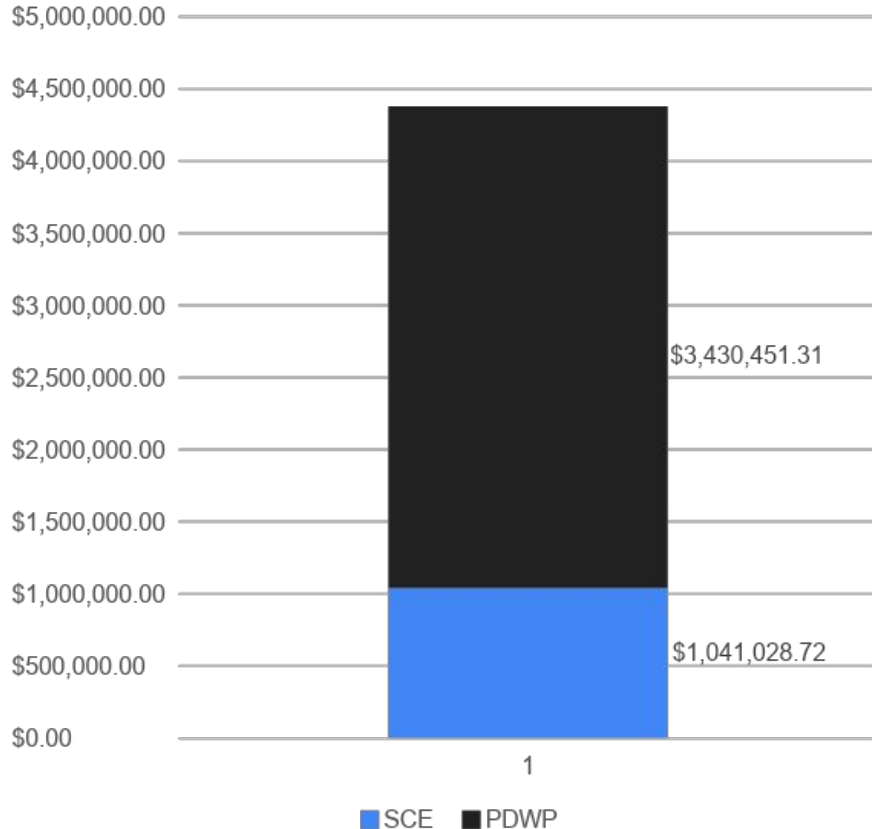


Total PUSD Energy
Cost for 2023 -
\$4,901,344.13



Overview of District Energy Cost - 2024

PUSD 2024 Energy Costs



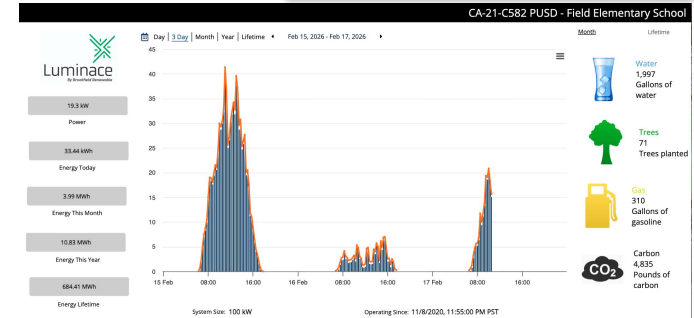
Total PUSD Energy
Cost for 2024 -
\$4,471,480.03



Overview of Luminace Solar PPA Contract

EXHIBIT A DESCRIPTION OF PROPERTY

PROPERTY NAME	LOCATION ADDRESS
Pasadena High School	2925 E Sierra Madre Blvd, Pasadena, CA 91107
Sierra Madre Elementary School	141 W Highland Ave, Sierra Madre, CA 91024
Altadena Elementary School	743 E. Calaveras Street, Altadena, CA 91001
Jackson STEM Academy	593 W Woodbury Rd, Altadena, CA 91001
John Muir High School	1905 Lincoln Ave, Pasadena, CA 91103
Webster Elementary School	2101 E Washington Blvd, Pasadena, CA 91104
Hamilton Elementary School	2089 Rose Villa St, Pasadena, CA 91107
Eliot Arts Magnet Academy	2184 Lake Ave, Altadena, CA 91001
Field Elementary School	3600 E Sierra Madre Blvd, Pasadena, CA 91107
Madison Elementary School	515 Ashtabula St, Pasadena, CA 91104
Sierra Madre Middle School	160 N Canon Ave, Sierra Madre, CA 91024
Willard Elementary School	301 Madre St, Pasadena, CA 91107



Review of 2024 PUSD Existing PPA Luminace Solar Site Installations

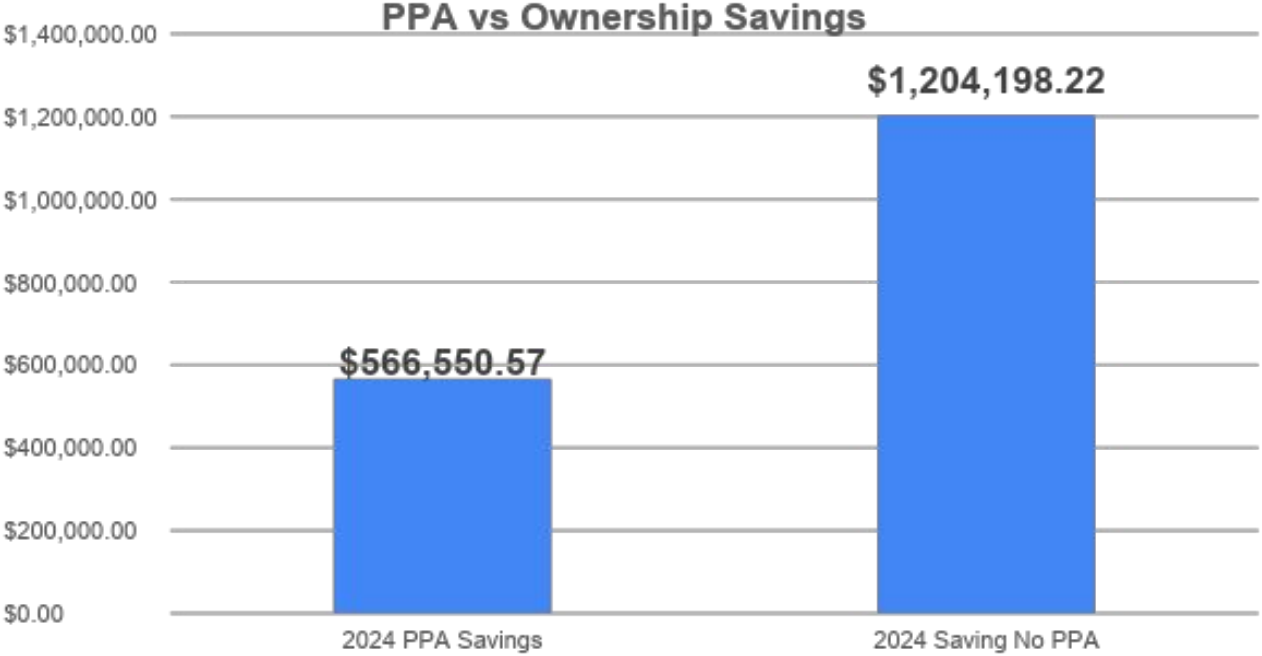
	A	I	L	M	P
1	Site locations	Utility Co	Operation Date	Solar Size	2024 Savings
2	Elementary School				
3	Altadena Arts Magnet School	SCE			
4	Field Elementary School	PDPW	11/8/20	100.8	\$ 21,754.71
5	Hamilton Elementary School	PDPW	12/27/20	93.6	\$ 19,172.03
6	Jackson Elementary School	SCE	1/31/21	108	\$ 36,200.94
7	Madison Elementary School	PDPW	1/31/21	129.6	\$ 16,015.76
8	Sierra Madre Elementary School	SCE	2/28/21	160.8	\$ 24,960.01
9	Webster Elementary School	SCE	12/20/20	72	\$ 17,221.29
10	Willard Elementary School	PDPW	12/19/20	216	\$ 94,817.33
11					
12	Middle School				
13	Eliot Arts Magnet	SCE	1/31/21	220.8	\$ 53,160.35
14	Sierra Madre Middle School	SCE	11/5/20	211.2	\$ 106,948.12
15	High School				
16	John Muir High School	PDPW	1/4/22	848.4	\$ 51,361.93
17	Pasadena High School	PDPW	1/5/22	704	\$ 124,938.10
18	Totals			2865.2	\$ 566,550.57
19				KW	Savings

Total PUSD Solar
Energy Savings
for 2024 -
\$566,550.57



PASADENA
Unified School District

Luminace PPA Savings vs District Ownership Savings



Energy & Sustainability Program

Moving Forward

- Technologies – Solar, Battery Storage, Electric Charging Stations, Energy Efficiency



Solar



Battery Storage



Electric
Charging
Stations



Energy
Efficiency

New Solar Site Consideration / Program Scope



Solar

Site locations		Parking - L/M/S	System	Notes
District Offices				
District Service Center	PDPW	L	752.64	Maintenance Parking Lot
Elementary School				
Altadena Arts Magnet School	SCE	S	150	Opportunity to put solar but there is no real parking lot, just parking spaces behind building.
Cleveland ECD, SPED, Alma Fuerte Charter	PDPW	S	194.56	Good Parking Lot to install solar. Corner of Forest Ave & Palisade St.
Jefferson School - City use	PDPW	S	266.24	Good Parking Lot to install solar. Off of Sierra Bonita Ave
Longfellow Elementary School	PDPW	S	165	New Parking Lot w/. solar - LPA Design
McKinley School K-8		S	317.44	Good Parking Lot to install solar. Off of E Del Mar Blvd.
Norma Coombs Elementary	PDPW	S	163.84	Good Parking Lot to install solar. Off of Paloma St.
Middle School				
Marshall Fundamental Secondary 6-12	PDPW	M	665.6	Good Candidate for solar
Octavia E. Butler Magnet		M	410.88	Good Candidate for solar
Wilson School - CIS, PALS	PDPW	S	307.2	Good Candidate for solar. Parking lot will need to be improved.
Blair Middle School	PDPW	S	296.96	Good Candidate for solar
High School				
Blair IB 6-12 (High School)	PDPW	L	700.16	Good Candidate for solar
Rose City High School 10-12	PDPW	L	520.96	Lot 1 - Good Candidate for solar
		S	304.64	Lot 2 - Good Candidate for solar
Pasadena High School	PDPW	L	1208.32	Good Candidate for solar
			6424.44	
			KW	

Existing Solar Sites -

2.865 MW

New Solar Sites -

6.424 MW

New Program Size -

9.290 MW

Parking – L/M/S Large (L) 650kw–above , Medium (M) 650–300kw, Small (S) – 0 – 300kw



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Solar Program Budget

Site locations			
District Offices	Cost per Watt	System Size	Estimated Cost
District Service Center	\$ 5.50	752,640	\$ 4,139,520.00
Elementary School			
Altadena Arts Magnet School	\$ 7.50	150,000	\$ 1,125,000.00
Cleveland ECD, SPED, Alma Fuerte Charter	\$ 7.50	194,560	\$ 1,459,200.00
Jefferson School - City use	\$ 7.50	266,240	\$ 1,996,800.00
Longfellow Elementary School	\$ 7.50	165,000	\$ 1,237,500.00
McKinley School K-8	\$ 7.50	317,440	\$ 2,380,800.00
Norma Coombs Elementary	\$ 7.50	163,840	\$ 1,228,800.00
Middle School			
Marshall Fundamental Secondary 6-12	\$ 5.50	665,600	\$ 3,660,800.00
Octavia E. Butler Magnet	\$ 6.50	410,880	\$ 2,670,720.00
Wilson School - CIS, PALS	\$ 7.50	307,200	\$ 2,304,000.00
Blair Middle School	\$ 7.50	296,960	\$ 2,227,200.00
High School			
Blair IB 6-12 (High School)	\$ 5.50	700,160	\$ 3,850,880.00
Rose City High School 10-12	\$ 5.50	520,960	\$ 2,865,280.00
	\$ 7.50	304,640	\$ 2,284,800.00
Pasadena High School	\$ 5.50	1,208,320	\$ 6,645,760.00
			\$40,077,060.00
Potential Program Growth	\$ 6.50	715,000	\$ 4,647,500.00
	Construction Cost		\$44,724,560.00
	Project Contingency	15%	\$ 6,708,684.00
	Program Contingency	10%	\$ 4,472,456.00
	Total		\$55,905,700.00



Solar

- Budget for an addition **+7 MW** in potential Solar Installations (Carports and New Construction Integrations)
- Current Market Pricing for Solar Carport System Installation in Schools:
 - \$5.50 Per Watt - Large Systems
 - \$6.50 Per Watt – Medium Systems
 - \$7.50 Per Watt – Small Systems
- Estimated Program Budget Needed:
 - **\$56,000,000**



Potential Savings – 7 MW Installed

(3% utility escalation + 0.5%/yr production degradation)

Year	Annual savings	Cumulative savings
1	\$3,049,947.79	\$3,049,947.79
2	\$3,125,738.99	\$6,175,686.78
3	\$3,203,413.61	\$9,379,100.39
4	\$3,283,019.55	\$12,662,119.94
5	\$3,364,604.43	\$16,026,724.37
6	\$3,448,217.87	\$19,474,942.24
7	\$3,533,911.53	\$23,008,853.77
8	\$3,621,739.10	\$26,630,592.87
9	\$3,711,756.38	\$30,342,349.26
10	\$3,804,021.23	\$34,146,370.49
11	\$3,898,593.76	\$38,044,964.25
12	\$3,995,536.16	\$42,040,500.42
13	\$4,094,912.90	\$46,135,413.32
14	\$4,196,790.68	\$50,332,204.00
15	\$4,301,238.55	\$54,633,442.55
16	\$4,408,328.08	\$59,041,770.63
17	\$4,518,133.43	\$63,559,904.06
18	\$4,630,731.47	\$68,190,635.53
19	\$4,746,201.92	\$72,936,837.45
20	\$4,864,627.54	\$77,801,464.99
21	\$4,986,094.31	\$82,787,559.30
22	\$5,110,691.72	\$87,898,251.02
23	\$5,238,512.83	\$93,136,763.85
24	\$5,369,654.59	\$98,506,418.44
25	\$5,497,177.19	\$103,977,233.57

(New)

7MW Savings after 25 years -
\$103,977,233

(Existing)

2.8MW Savings
Luminance Systems
after 25 years -
\$20,950,000



Solar

**Total Savings -
\$124,927,233**

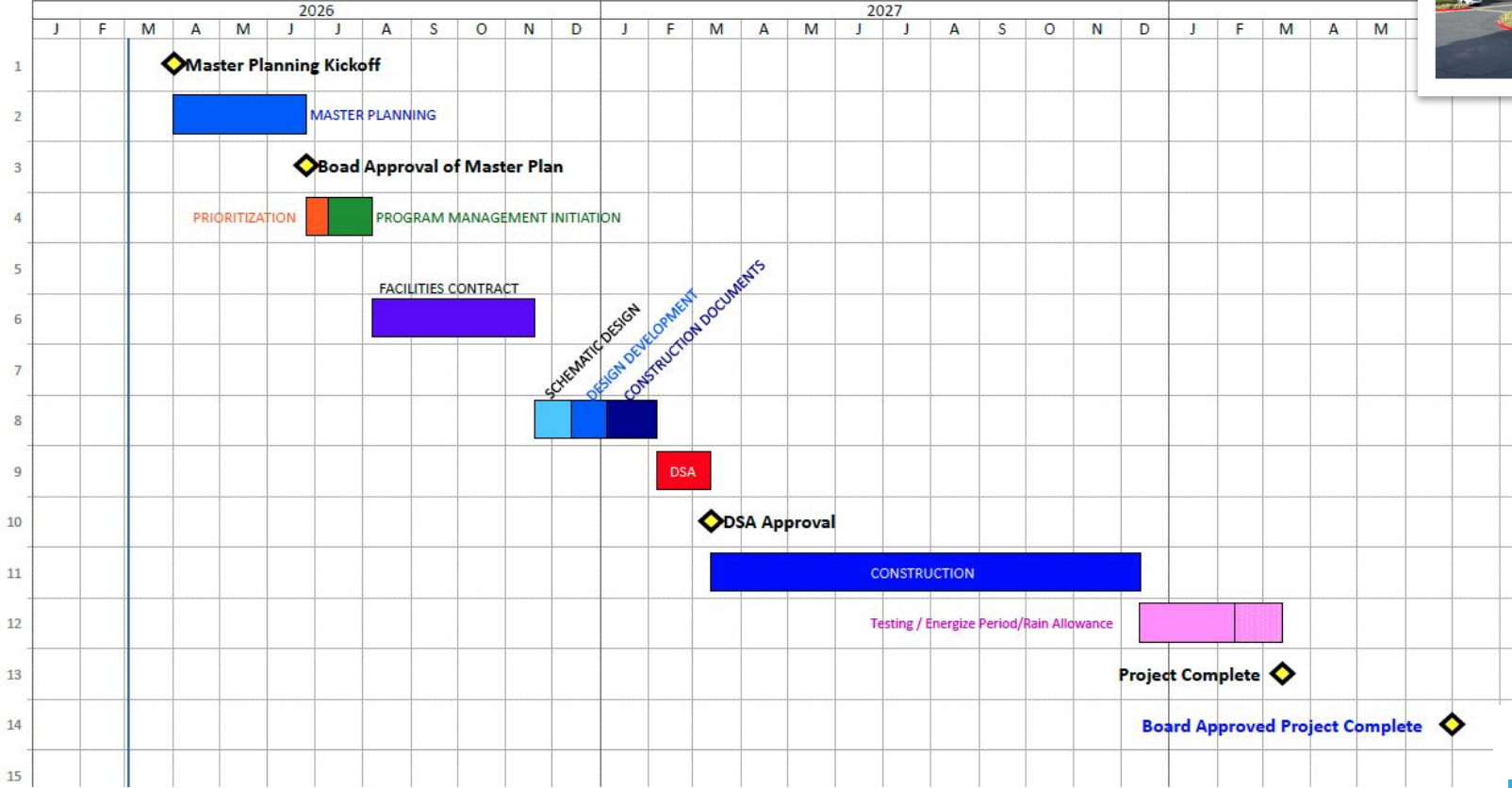


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Proposed Timeline – Phase 1 Solar Carports



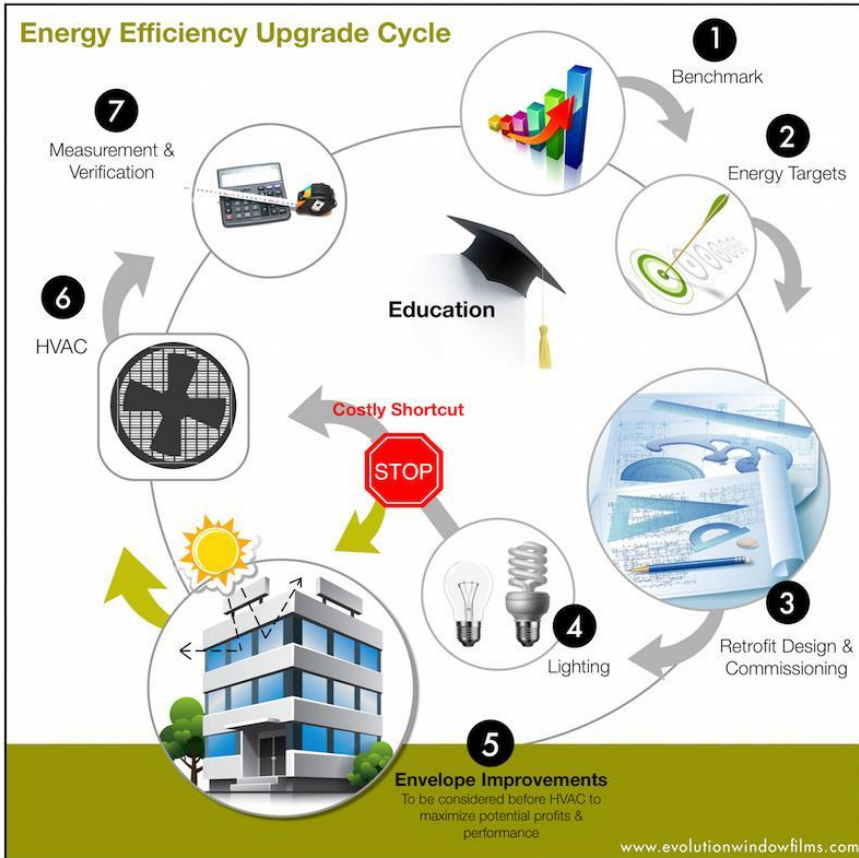
Solar



Energy Efficiency Projects



Energy Efficiency



District-Wide:

- Window Upgrades
- Lighting Retrofits / Replacements
- HVAC Upgrades
- Controls - Building Management Systems (BMS)
- Building Envelope Projects



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WINDOWS REPLACEMENT PROJECT

100-Year Old Windows

- ❑ Original Windows Still in Many Buildings
- ❑ Single-Pane Glass Construction
- ❑ High Energy Loss
- ❑ Poor Sound Control
- ❑ Impacts Classroom Comfort
- ❑ Higher Utility Costs for the District

Windows Do Not Meet Energy Efficiency Standards



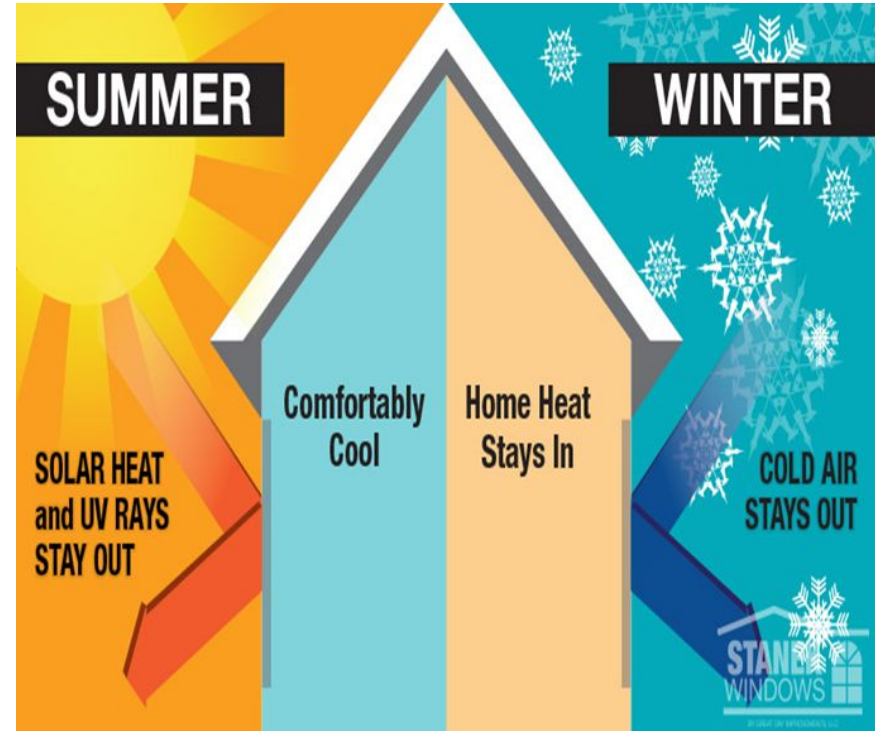
WINDOWS REPLACEMENT PROJECT



WINDOWS REPLACEMENT PROJECT

Modern Energy-Efficient Windows Improve Learning Environments

- ❑ Double-Pane Insulated Glass
- ❑ Low-E Coatings Reduce Heat Gain
- ❑ Improved Sound Attenuation
- ❑ Reduced Heating & Cooling Demand
- ❑ Reduced District Utility Costs
- ❑ More Comfortable Classrooms



WINDOWS REPLACEMENT PROJECT

Washington ES - Phase 1 Window Replacement

- ❑ First Priority Campus
- ❑ 248 Existing Windows Scheduled for Replacement
- ❑ Preliminary Project Cost:
Approximately \$2.5M
- ❑ Replace Deteriorated Single-Pane Windows with Modern Insulated Systems
- ❑ Improve Energy Efficiency, Sound Control, and Classroom Comfort

Next Step: Advance project scope, schedule and funding plan.



Recently Installed Modern High-Performance Window Systems

WINDOWS REPLACEMENT PROJECT

Priority Schools Identified

- ❑ District Review Identified **10** Priority Campuses with Aging Windows
- ❑ Planning-Level Cost Estimate: ***Approximately \$13-\$15M***
- ❑ Window Replacements to be Implemented in Phases Over Multiple Years
- ❑ Future Phases Will be Prioritized Based on Window Condition and Campus Needs

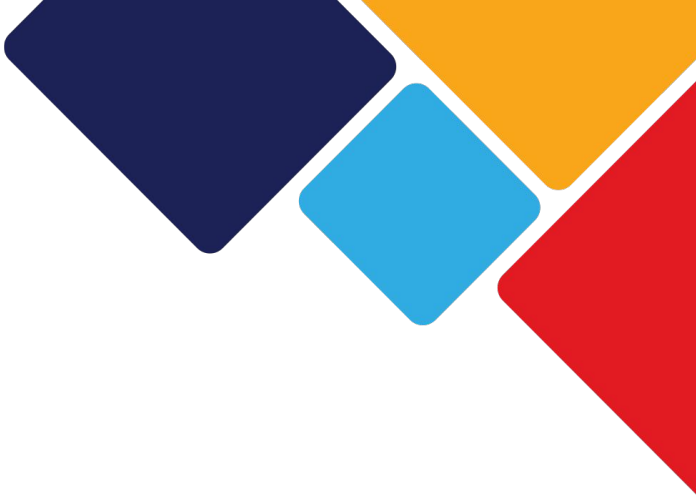
Stand-alone Projects

1. Washington ES
2. Jackson ES
3. Norma Coombs ES
4. Hamilton ES
5. McKinley School
6. Muir HS
7. Cleveland ES

Part of a Modernization

8. Octavia Butler Magnet
9. Webster ES
10. San Rafael ES





Breakout Session
Group Discussions & Polling

NEXT STEPS...

- District-Wide Master Planning and Energy Master Plan Validation
- Phase 1 – Planning and Implementing Solar Carport Installation
- Finalization of Energy Master Plan in Parallel with District-Wide Master Plan
- Phase 2 – Solar, Battery Storage, Car Charging Stations, Energy Efficiency Projects





QUESTIONS

