

# SUPPLEMENTAL FINANCIAL FEASIBILITY ANALYSIS

SAN RAFAEL CITY SCHOOL DISTRICT

October 25, 2018

# TOPICS COVERED

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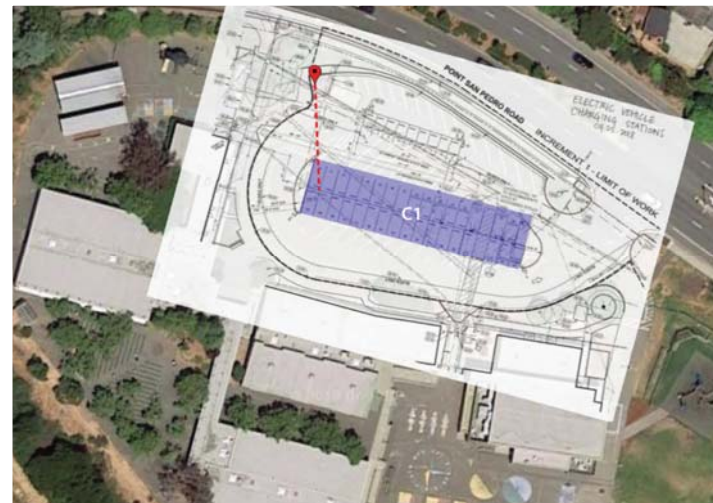
1. A comparison of financing scenarios—(a) PPA-financed versus (b) PPA-financed with a 7-year system buyout—is presented for a 9-site suite of solar PV projects sited at San Rafael City schools.
2. Financial results for the two sites receiving Prop-39 funds for solar PV projects —Bahia Vista and Venetia Valley—are presented separately from the rest of the 9-site suite of projects.

# CONTEXT AND INTRODUCTION

1. The comparison of financing scenarios—(a) PPA-financed versus (b) PPA-financed with a 7-year system buyout—is based on PV system layouts and siting as reflected in the April 2018 version of the Feasibility Study, while noting some pending editorial corrections plus inclusion of San Pedro Elementary School.



Glenwood



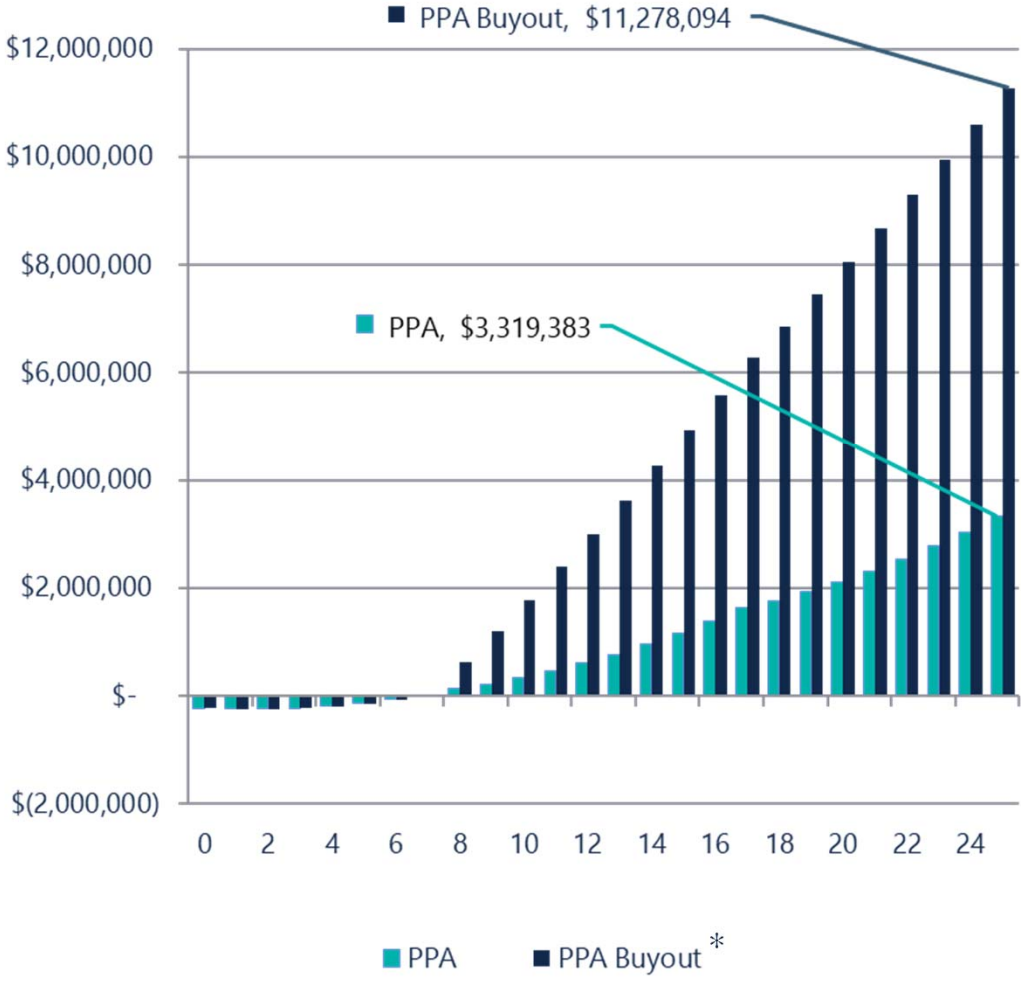
San Pedro



Bahia Vista

# 25-YEAR SUMMARY OF FINANCIAL IMPACTS ON THE GENERAL FUND (9-SITE SUITE)

Cumulative Savings to General Fund



Annual Energy Costs



\*Neglects cost of PPA Buyout at Year 7 (GOF Bond)

# COMPARISON OF 25-YEAR FINANCIAL MODELING RESULTS: PPA versus PPA with 7-Year Buyout (9-Site Suite)

Metric	Units	PPA	PPA with 7-year Buyout
Solar PV System Capital Cost	\$	\$8,900,000	
Project Development Costs & Contingency (Soft Costs)	\$	\$222,000	
Turnkey Project Cost	\$/Watt	\$3.76	
Assumed Utility Escalation	%/Year	3%	
Year-1 Energy Savings	\$	(\$18,000)	
PPA Buyout Price at Year 7 (GOF Bond)	\$, Estimated	n/a	\$5,062,000
25-Year Project Savings	\$, Nominal	\$3,541,000	\$6,437,000*
25-Year Project Savings	\$, NPV, 2% DR	\$2,324,000	\$3,728,000*
Simple Payback	Years	6.8 years	15.2 years*
25-Year Project Internal Rate of Return	%	22.3%	9.6%*

\*Reflects cost of PPA Buyout at Year 7 (GOF bond)

# CONTEXT DETAILS: PV SYSTEMS SUMMARY (9-SITE SUITE)

System Characteristics	Units	Value
Aggregate PV System Size	kWp	2,361
Number of Sites	n/a	9
PV System Yield	kWh/kWp	1,534
Energy Consumption Offset	%	93%
Energy Cost Offset for Financing Options	%	7-yr buyout PPA: 23% PPA: 13%
CO <sub>2</sub> Offset	Metric Tons	22,000

# CONTEXT DETAILS: PV SYSTEMS SUMMARY (9-SITE SUITE)

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PV system changes still under consideration but not reflected by this analysis include the following:

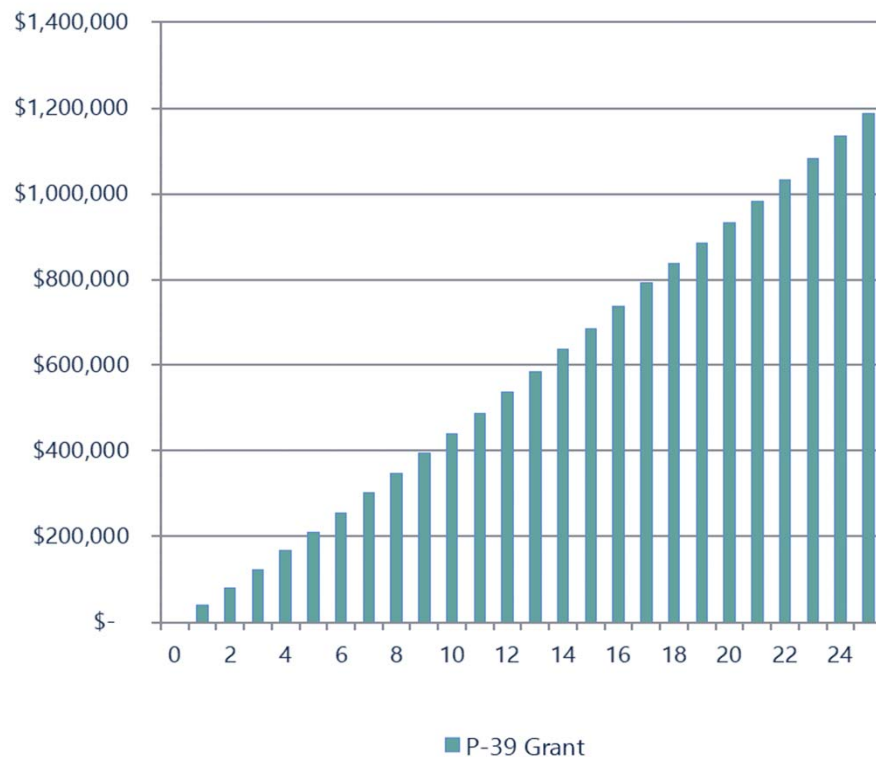
1. The C3-C4 canopies at **SRHS** will be eliminated (-660 kWp). The C3-C4 canopies represent 28% of the aggregate PV system capacity.
2. A PV solar parking lot shade near the tennis courts at **SRHS** will be added (+100 kWp). However, the final configuration of parking stalls in this area is unknown.
3. Whether the proposed playfield shade structures at **Davidson** and **Sun Valley** are wanted is unknown (178 kWp, 82 kWp)—i.e., 11% of aggregate capacity.
4. Small rooftops at **Davidson** will be eliminated (-27 kWp).
5. The configuration of parking stalls at **Davidson** is unknown and may affect the PV system layout as currently envisioned.
6. Whether existing picnic shades at **Davidson** might be replaced with a larger, PV solar shade structure is unknown.
7. Installing rooftop PV systems at the **Venetia Valley** Middle School buildings will be added to the layout plans (+82 kWp). (DSA approval of the standing-seam roof attachments is expected to be an issue—possibly a lengthy approval process.)
8. Generally, school principals' buy-in for PV system layouts is unknown.



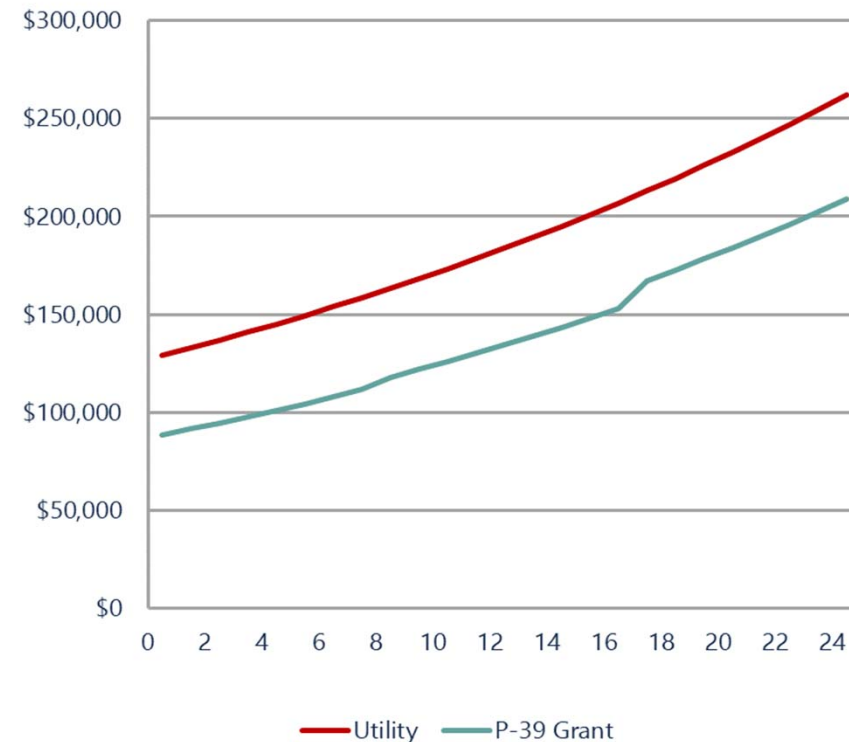
# 25-YEAR SUMMARY OF FINANCIAL IMPACTS ON THE GENERAL FUND (PROP-39 SITES ONLY)

2. Financial results for the two sites receiving Prop-39 funds for solar PV projects —Bahia Vista and Venetia Valley—are based on estimates of system sizes and costs constrained by the scale of the Prop 39 Grant funds allocated for solar PV projects, \$778,000.

Cumulative Project Savings



Annual Energy Costs





# COMPARISON OF 25-YEAR FINANCIAL MODELING RESULTS: Cash Purchase with P-39 Grant Funds (P-39 Sites Only)

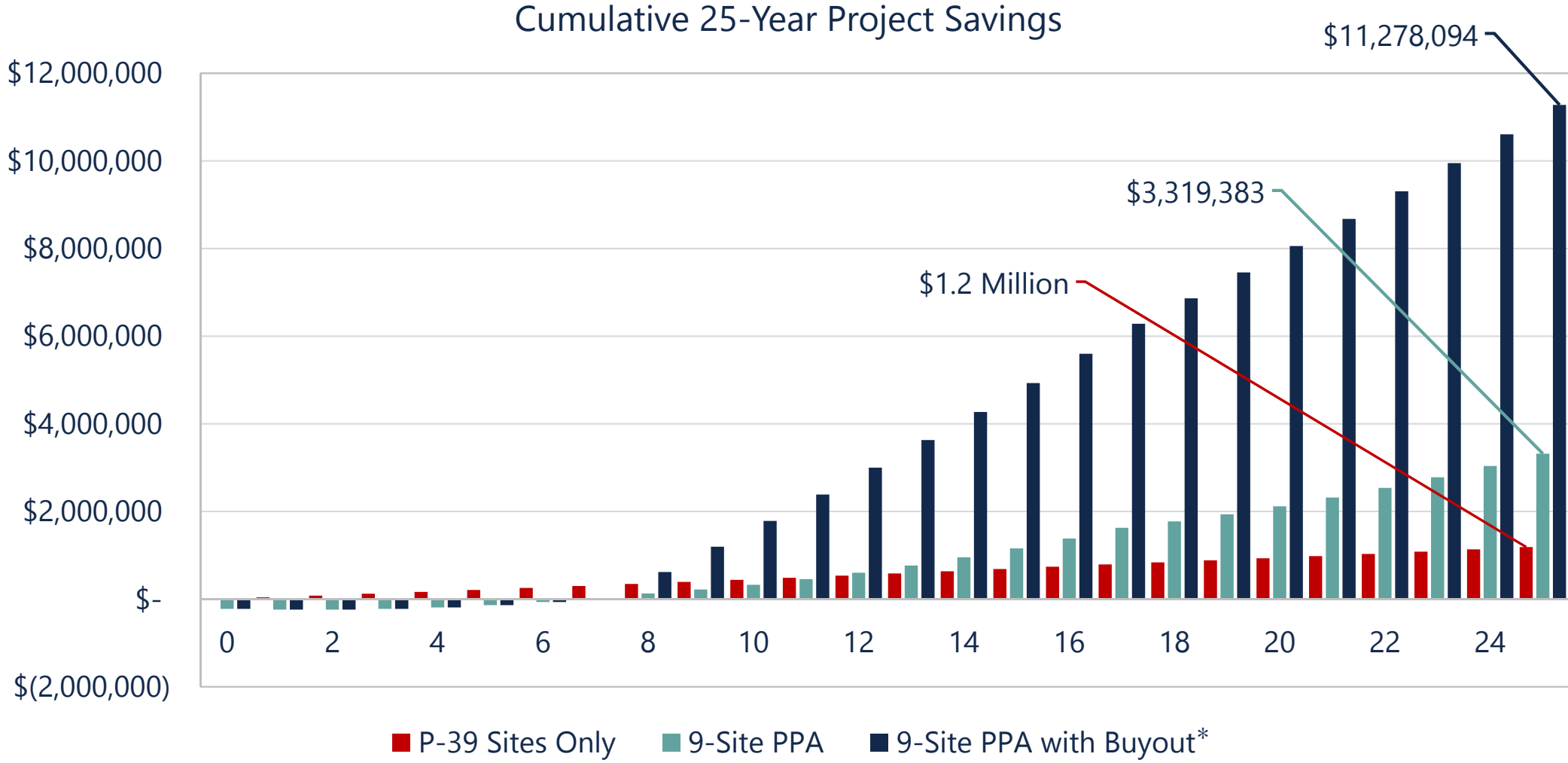
Metric	Units	Cash Purchase
Solar PV System Capital Cost	\$	Approximately \$700,000
Project Development Costs & Contingency (Soft Costs)	\$	Approximately 10.5%
Turnkey Project Cost	\$/Watt	\$3.92
Year-1 Energy Savings	\$	\$40,000
25-Year Project Savings	\$, Nominal	\$1.2 million
25-Year Project Savings	\$, NPV, 2% DR	\$900 thousand
Simple Payback of Grant Funds	Years	18 years
25-Year Project Internal Rate of Return	%	3%

\*Reflects cost of PPA Buyout at Year 7 (GOF bond)

# CONTEXT DETAILS: PV SYSTEMS SUMMARY (P-39 SITES ONLY)

System Characteristics	Units	Value
Aggregate PV System Size	kWp	179
Number of Sites	n/a	2
PV System Yield	kWh/kWp	1,434
Energy Consumption Offset	%	43%
Energy Cost Offset	%	25%
CO <sub>2</sub> Offset	Metric Tons	2,000

# SUMMARY OF FINANCIAL IMPACTS ON THE GENERAL FUND FOR THREE SCENARIOS



\*Neglects cost of PPA Buyout at Year 7 (GOF bond)