

Capital Facilities Study Session

San Rafael City Schools

March 12, 2018

4:00 PM – 5:00 PM

Dr. Daniel Zaich



Agenda

- Introduction – Dr. Dan Zaich
- SAGE Renewables
 - ✧ Draft Investment Grade Solar Feasibility Report
 - ✧ Q & A
- Budget Summary
 - Expenditures by District
 - Fund Status
 - Construction Schedules
 - Planning for Budget Study Session (TBD)

SOLAR STUDY SESSION

DRAFT INVESTMENT GRADE SOLAR FEASIBILITY REPORT SAN RAFAEL CITY SCHOOL DISTRICT

Board Meeting
March 12th, 2018

AGENDA

1. Sage Introduction
2. Feasibility Study Summary
3. Project Considerations & Examples
4. Current Design
5. Savings Estimates
6. Next Steps/Timeline
7. Questions

SOLAR FEASIBILITY STUDY RECAP

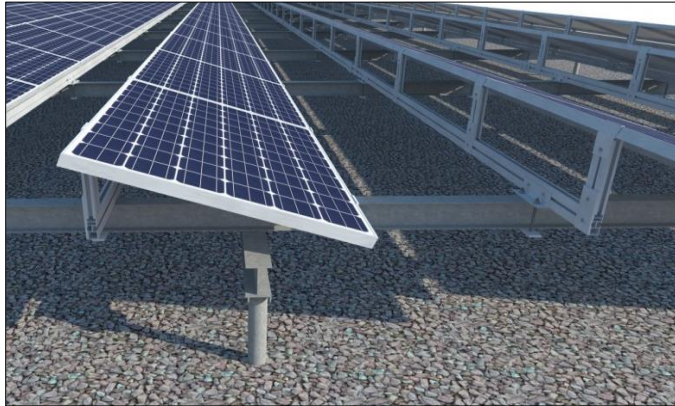
Table 1-1: Summary of Analysis

Available System Size	2,254 kWp
Targeted Sites	8 Sites
Energy Consumption Offset	92%
Energy Cost Offset	78%
Financing Alternatives Studied	PPA & TELP
Environmental Benefit, 25-yr CO ₂ Offset	20,000 tons

PV SHADE STRUCTURE EXAMPLE



PV ROOF EXAMPLE



PV GROUNDMOUNT EXAMPLE



SOLAR FEASIBILITY DESIGN STRATEGY

1. Identify Acceptable Locations for Solar Development
2. Avoid Roofs Except New Construction
3. Where possible group shade structures together
4. Establish 95% Electricity Usage Offset Target
5. Add Value to District – Savings, Environmental Benefit and Shade

CONCEPTUAL DESIGN: BAHIA VISTA ES

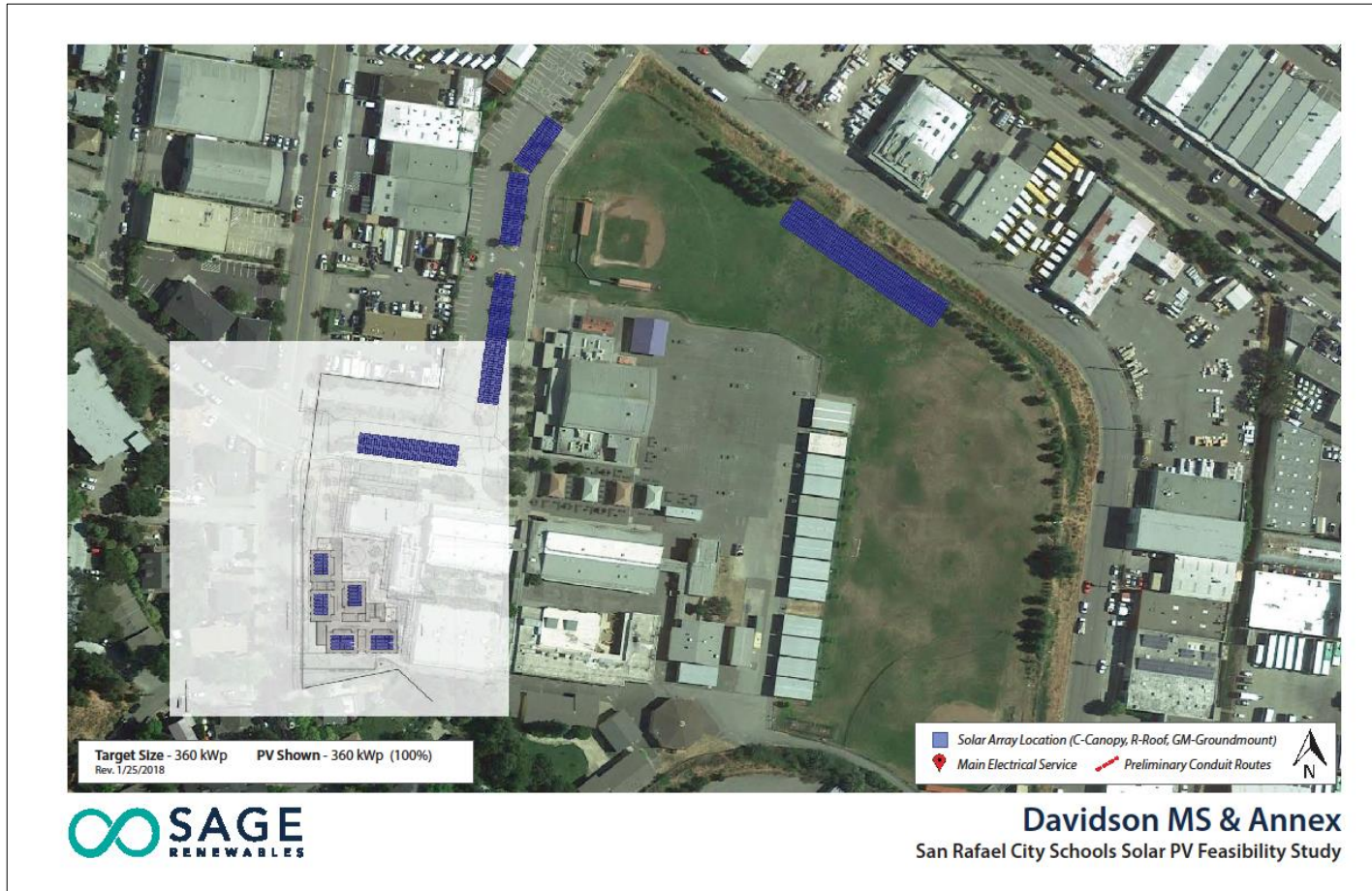


Bahia Vista ES
San Rafael City Schools Solar PV Feasibility Study

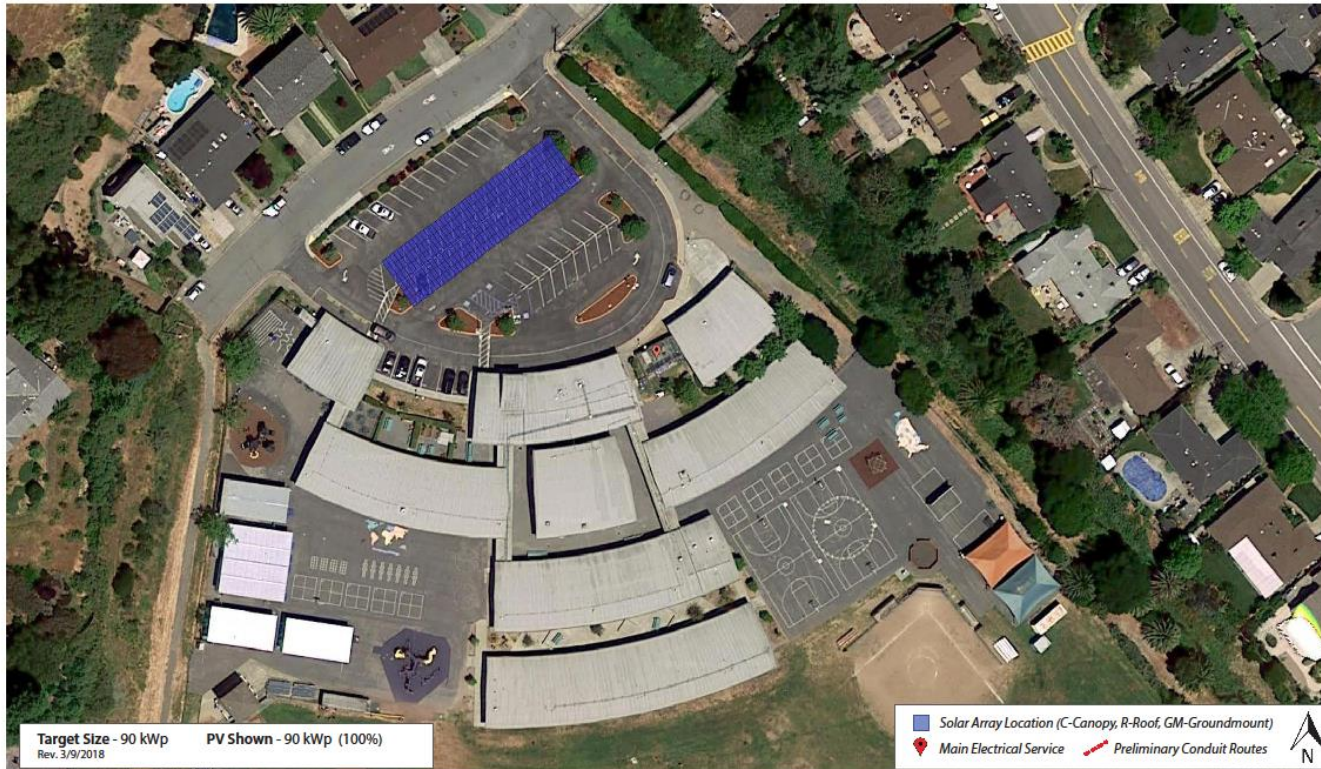
CONCEPTUAL DESIGN: COLEMAN ES



CONCEPTUAL DESIGN: DAVIDSON MS



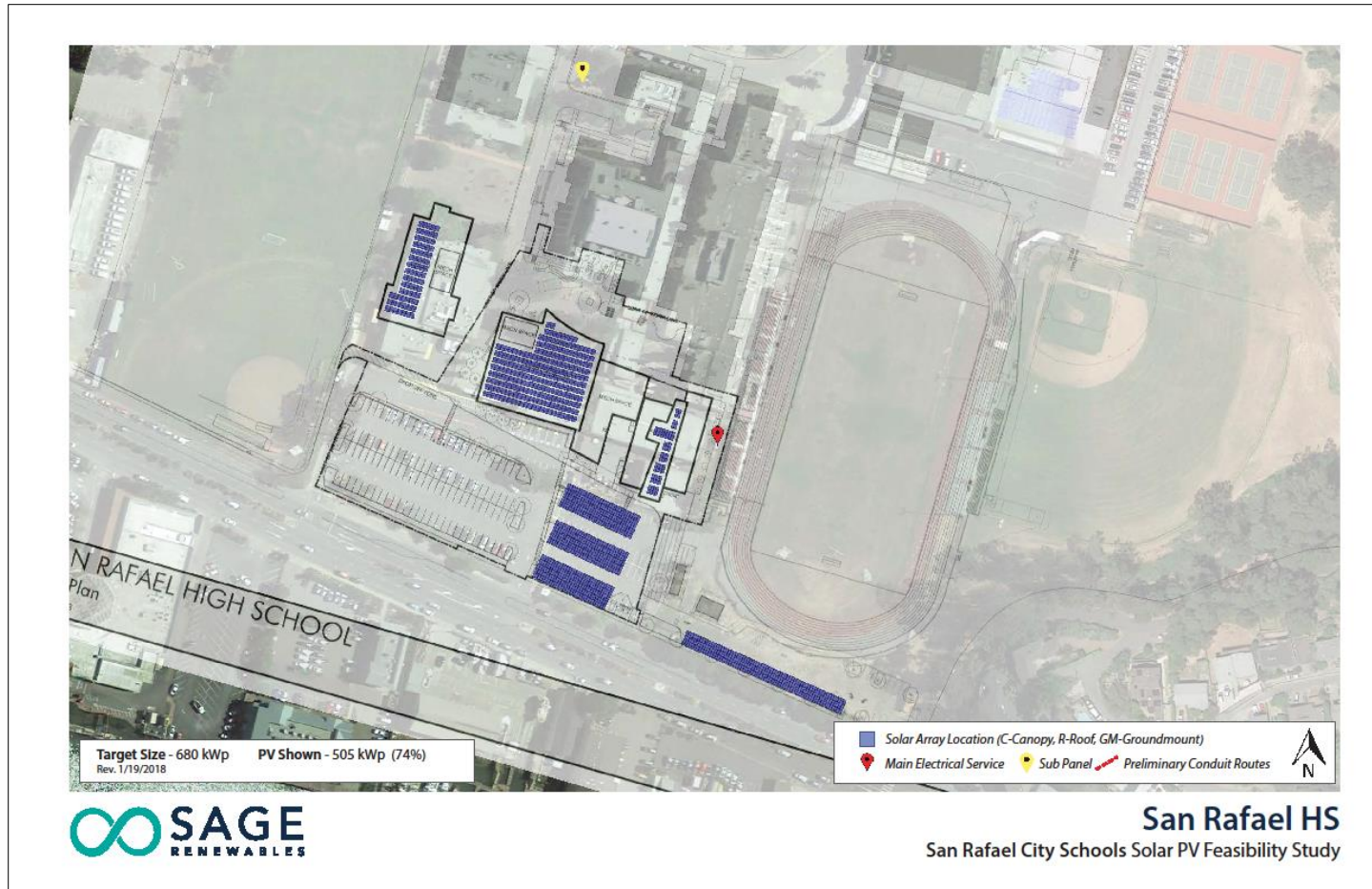
CONCEPTUAL DESIGN: GLENWOOD ES



Glenwood ES
San Rafael City Schools Solar PV Feasibility Study



CONCEPTUAL DESIGN: SAN RAFAEL HS



CONCEPTUAL DESIGN: SUN VALLEY ES

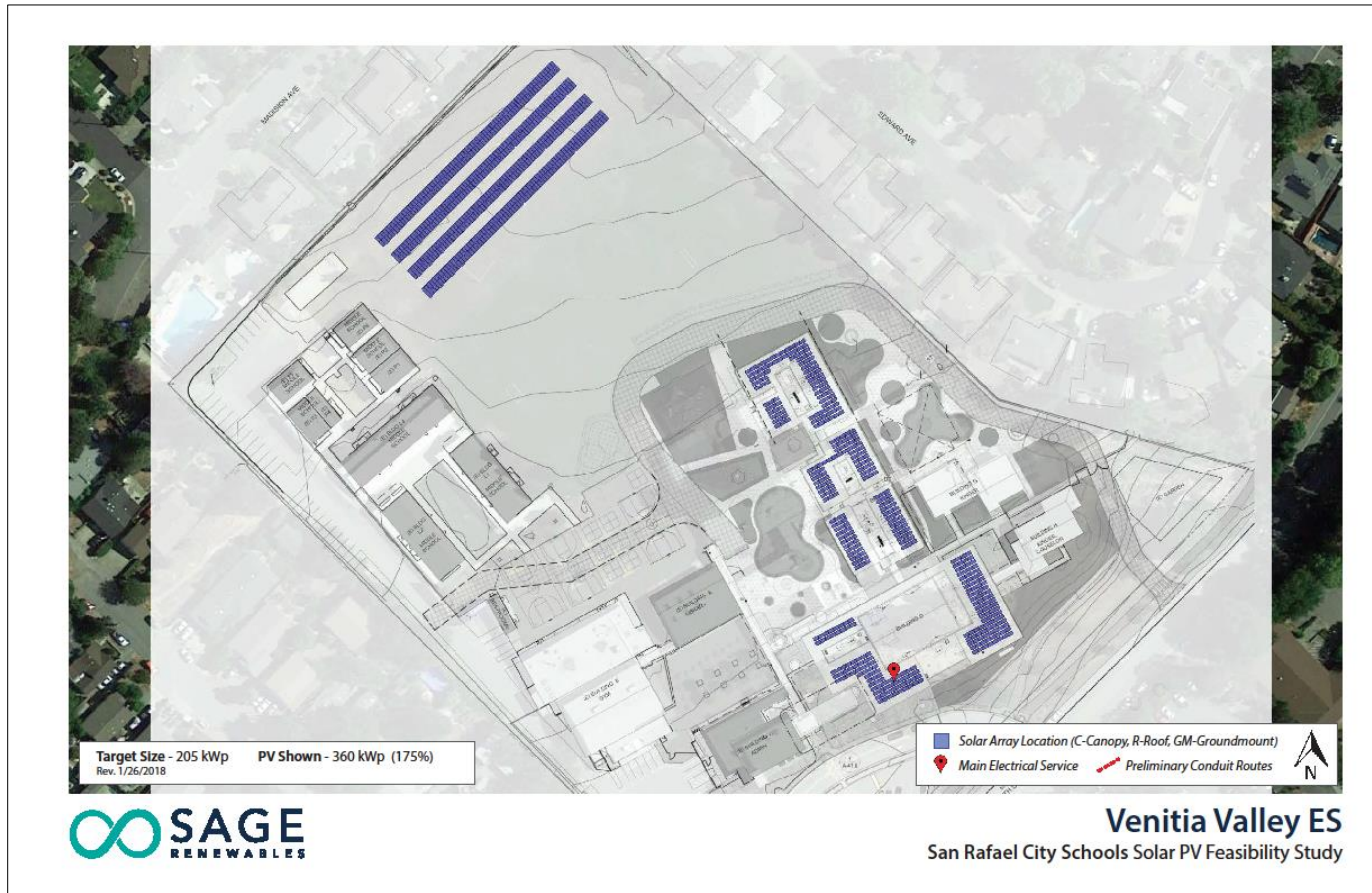


Sun Valley ES
San Rafael City Schools Solar PV Feasibility Study

CONCEPTUAL DESIGN: TERRA LINDA HS



CONCEPTUAL DESIGN: VENETIA VALLEY ES



VALUE FROM SOLAR

1. Implemented Through Net- Energy Metering
2. Tied to Electric Grid – Receive Compensation When Exporting
3. Retail Rates – Up to Annual Electricity Usage
4. SRCSD – PG&E and MCE Customer – Factored into Savings

PROJECT FINANCIALS

25 Year Project Financial Summary	
Energy Cost, Nominal \$	\$28,219,000
Project Capital Costs \$	\$9,259,000
Out-of-Pocket Costs \$	PPA \$127,000 TELP \$0
Savings vs. Utility, Nominal \$	PPA \$3,357,000 TELP \$1,263,000
Simple Payback	PPA 3 Years TELP 23 Years
Net Present Value @ 2% D.R.	PPA \$2,360,00 TELP \$456,000

NEXT STEPS

- Finalize Investment Grade Report
- RFP for Solar Installation Vendors - Spring 2018
- Evaluate Proposals & Financing Options w/
Vendor Pricing – Summer 2018
- Contract Negotiations – Fall 2018
- Design/Permitting Winter/Spring 2019
- Construction Summer 2019

BUDGET SUMMARY / BUDGET PLANNING BOE STUDY SESSION (DATE TBD)

EXPENDITURES BY DISTRICT

Expenditures by District

Measure A - Elementary School District

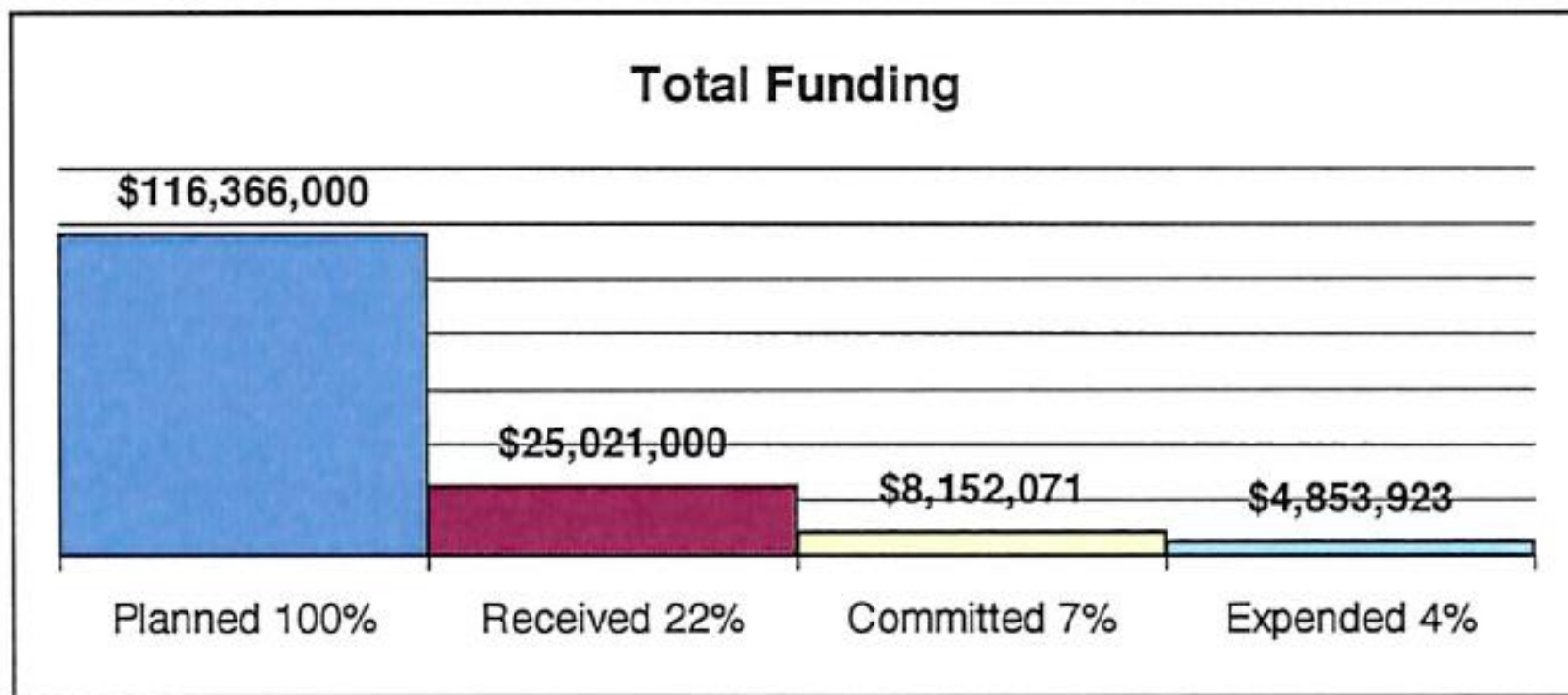
School Project Name	Expenditures as of 2/28/2018
Bahia Vista Elementary School - Bahia Vista Lunch/Shade Structure (3)	\$ 349,113.14
Davidson Middle School - DMS A Site-Wide Project Costs	\$ 98,279.00
Davidson Middle School - DMS Gym Locker PE Expansion	
Davidson Middle School - DMS New MPR	
Davidson Middle School - DMS New STEAM CR Building	\$ 379,908.50
Davidson Middle School - DMS Ten Wing Roofing/Waterproofing	\$ 227,947.65
Glenwood Elementary School - GL MultiPurpose; Modular	\$ 274,336.61
Laurel Dell Elementary School - LD A Site-Wide Project Costs	\$ 48,389.63
Laurel Dell Elementary School - LD New Construction and Modernization	\$ 561,207.32
Laurel Dell Elementary School - LD Transitional Housing (3)	\$ 99,192.00
San Pedro Elementary School - SP New Classroom; Admin Bldg; Modular	\$ 215,199.06
San Pedro Elementary School - SP Site-Wide Project Costs	\$ 96,017.94
Short Elementary School - SH 4 CRs, MPR, Library, Mod, Improvements	\$ 6,991.00
Venetia Valley Middle School - V V A Site-Wide Project Costs	\$ 98,921.00
Venetia Valley Middle School - V V Modernize Kinder and Gym	
Venetia Valley Middle School - V V New MultiPurpose Building	\$ 255,952.41
Venetia Valley Middle School - V V Park, Drop, Frontage Improvements	
Venetia Valley Middle School - V V Replacement CR Wings	\$ 773,587.42
Venetia Valley Middle School - V V Shade Structure	
Venetia Valley Middle School - V V Transitional Housing	\$ 24,025.41
Z ESD Program Common Costs - W Program Administration - District	\$ 170,169.91
Z ESD Program Common Costs - X Program Management	\$ 756,245.00
Z ESD Program Common Costs - Y Program Services and Operations	\$ 418,439.37
Z ESD Program Reserve - Z Program Reserve	
Totals	\$ 4,853,922.37

Measure B - High School District

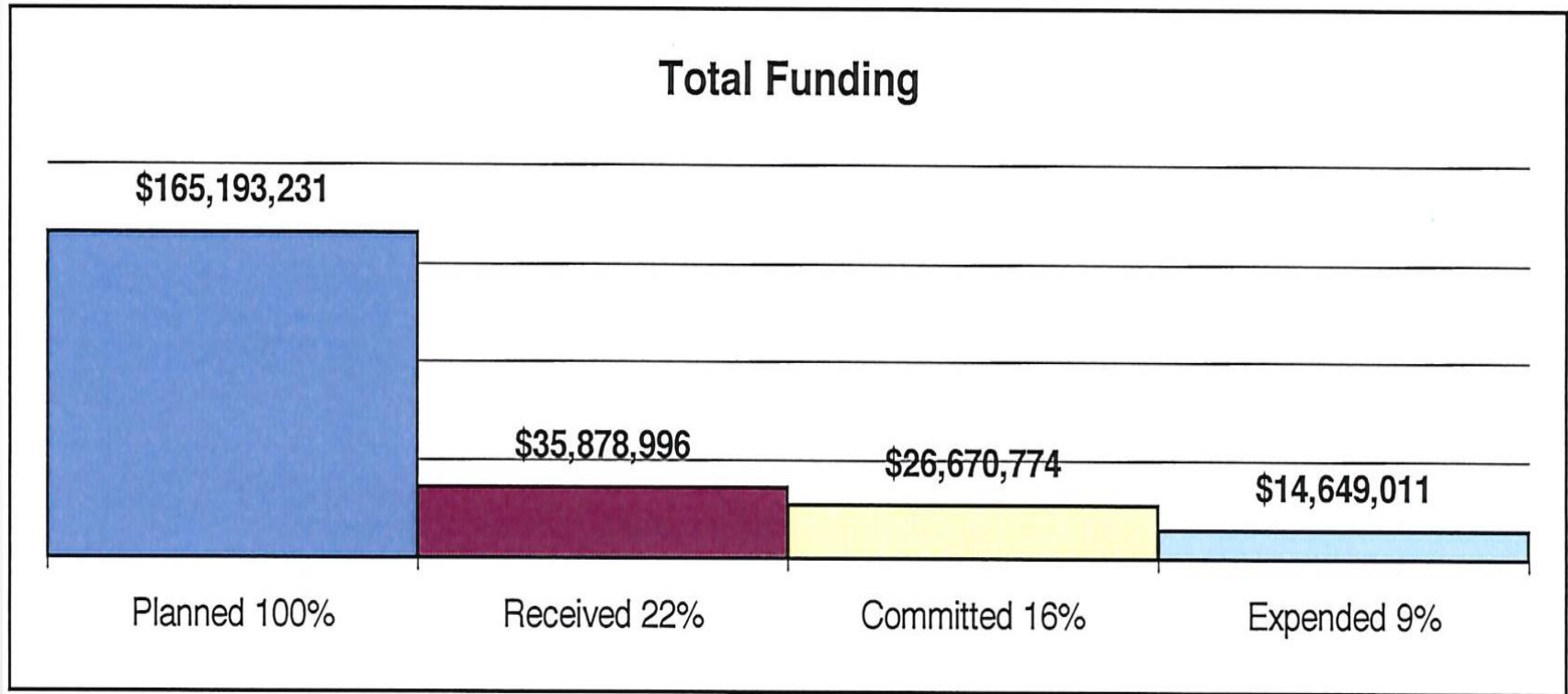
School Project Name	Expenditures as of 2/28/2018
Madrone High School - Madrone	\$ 130,126
San Rafael High School - SR A Site-Wide Project	\$ 616,720
San Rafael High School - SR Admin, Commons, Kitchen, Entry	\$ 538,508
San Rafael High School - SR Air Conditioning (3)	\$ 2,641,360
San Rafael High School - SR Convert Administration to Classrooms	\$ -
San Rafael High School - SR CTE, Science, Eng, Tech	\$ -
San Rafael High School - SR Parking, Quad, Site-Work	\$ 12,710
San Rafael High School - SR PE Ath Mod & Locker Add	\$ -
San Rafael High School - SR Transitional Housing Ph 1: Science Labs	\$ 34,274
San Rafael High School - SRHS Stadium (1) (4)	\$ 5,805,942
Terra Linda High School - TL A Site Wide Project	\$ 196,219
Terra Linda High School - TL Air Conditioning (3)	\$ 2,467,294
Terra Linda High School - TL ICT (STEAM) Renovation (2)	\$ -
Terra Linda High School - TL Music Building	\$ -
Terra Linda High School - TL New Commons, Kitchen, Up Library, Drama (2)	\$ 509,406
Terra Linda High School - TL New Fine Arts, Ceramic Bldg	\$ -
Terra Linda High School - TL New Main Gym (2)	\$ -
Terra Linda High School - TL Parking Main Entry Renovation	\$ -
Terra Linda High School - TL Renovate CRs; Main Building (2)	\$ -
Terra Linda High School - TL Temp Housing Music Drama	\$ -
Z HSD Program Common Costs - W Program Administration	\$ 157,306
Z HSD Program Common Costs - X Program Management	\$ 996,030
Z HSD Program Common Costs - Y Program Services	\$ 543,116
Z HSD Program Reserve - Z Program Reserve	
Total	\$ 14,649,011

FUND STATUS

Fund Status – Measure A (ESD)



Fund Status – Measure B (HSD)



CONSTRUCTION SCHEDULES

Construction Schedules - Measure A

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	2016				2017				2018				2019				2020				2021				2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
MEASURE A																																				
Davidson (QKA)																																				
10 Wing Roofing and Waterproofing							De	Const.	Cl																											
New STEAM Classroom Bldg.							Design			DSA			Construction				Close																			
New MPR Music Bldg.										Design				DSA			Construction											Close								
Gym Locker Expansion										Design	DSA		Construction			Close																				
Venetia Valley (SVA)																																				
Lunch/Shade Structure																								Design	DSA		Construction		Close							
Replacement Classroom Buildings							Design			DSA			Construction				Close																			
New MPR with Support Spaces							Design			DSA			Construction				Close																			
Parking + Frontage Improvements																								Design	DSA		Construction					Close				
Campus Modernizations: Kinder + Gym													Design	DSA		Construction					Close															
Transitional Housing								Design	DSA			Construction				Close																				
Bahia Vista (SVA)							De	Co	Cl																											
Glenwood (DLM)							Design	DSA				Construction				Close																				
Laurel Dell (QKA)							Design			DSA			Construction			Close																				
Laurel Dell Swing Space (QKA)							Design			DS	Cor	Close																								
San Pedro (HY)							Design			DSA			Construction			Close																				

Construction Schedules - Measure B

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	2016				2017				2018				2019				2020				2021				2022				2023				2024			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
MEASURE B																																				
Terra Linda HS (DLM)																																				
Air Conditioning					Design	De	Co	CI																												
Transitional Housing Music Drama								Design	De	Co	CI																									
New Commons Kitchen Library + Drama					Design				DSA				Construction								Close															
New Music Building					Design				DSA				Construction								Close															
New Main Gym														Design			DSA				Construction				Close											
New Fine Arts Ceramics Building														Design			DSA				Construction				Close											
New ICT Steam Renovations to Library					Design				DSA				Construction				Close																			
Renovate Classrooms Main Building														Design			DSA				Construction				Close											
Parking Main Entry Renovations														Design			DSA				Construction				Close											
San Rafael HS (HY)																																				
Stadium Renovation	Design				DSA				Construction			Close																								
Air Conditioning					Design	De	Co	CI																												
Transitional Housing Phase 1									Design	De	Co	CI																								
Madrone + Kitchen, Commons + Admin								Design				DSA					Construction				Close															
New CTE Science Eng. Tech.																	Design			DSA				Construction			Close									
Parking, Quads + Site Work												Design				DSA				Construction			Close													
Convert Old Admin to CR's																	Design			DSA				Const.		Close										
PE Athletics Mod + Locker Addition																									Design			DSA		Const.		Close				

BOE Budget Study Session

- Meeting Dates & Location
 - For Discussion

QUESTIONS