

Scotts Valley Unified School District

Renewable Energy Proposal

Brian Taylor

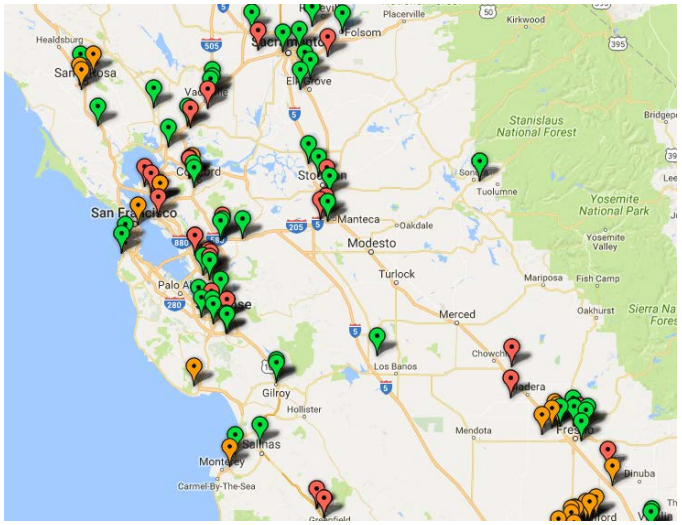
Project Development Manager – CA Schools

September 2017

FOREFRONT POWER

Leader in California Solar Solutions





- **ForeFront Power Team**
  - 800 MW Developed across 1000 projects
  - $3B Solar Financing
- **Parent Company: Mitsui & Co**
  - $29B Market Cap
  - Rated ‘A’
- **Leader in Solar Financial Innovation**
- **California Public Sector**
  - 150+ Public Agencies totaling 280+MW
  - +45 MW of CA Public Schools & Colleges

Some Customers You Many Know



Irvine Unified School District

BCSD
BAKERSFIELD CITY SCHOOL DISTRICT

DIXON UNIFIED SCHOOL DISTRICT

SCCCD

DEPARTMENT OF CORRECTIONS AND REHABILITATION
STATE OF CALIFORNIA

TODAY'S SCHOLARS, TOMORROW'S LEADERS
Rialto
Unified School District
Established 1891

LASD

NCLUSD
Newman-Crows Landing

PASO ROBLES
JOINT UNIFIED SCHOOL DISTRICT
THE DISTRICT OF EXCELLENCE

TRACY
UNIFIED SCHOOL DISTRICT

Fairfax
School District
Empowering Students To Succeed

ATASCADERO
Shaping the Future
UNIFIED SCHOOL DISTRICT

THE UNIVERSITY OF CALIFORNIA
LET THERE BE LIGHT
1868

UCIrvine
University of California, Irvine

CALIFORNIA STATE UNIVERSITY
19 65
EXCELLENCE
PARTNERSHIPS
COMMUNITY
BAKERSFIELD

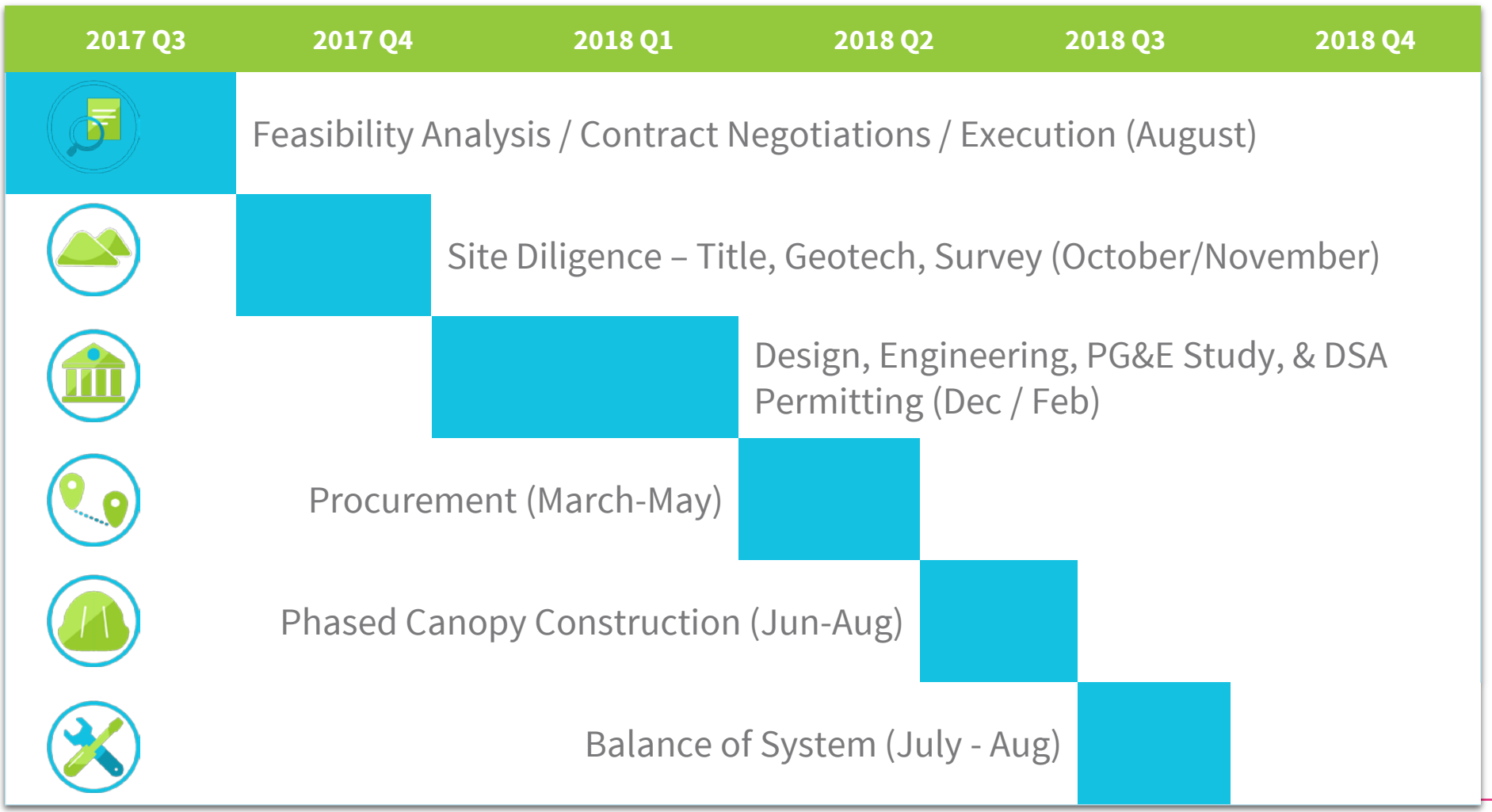
Backed by global energy expertise.

MITSUI & CO.

400	$96.6	$29.9
years of leadership	billion in total assets	billion in total equity

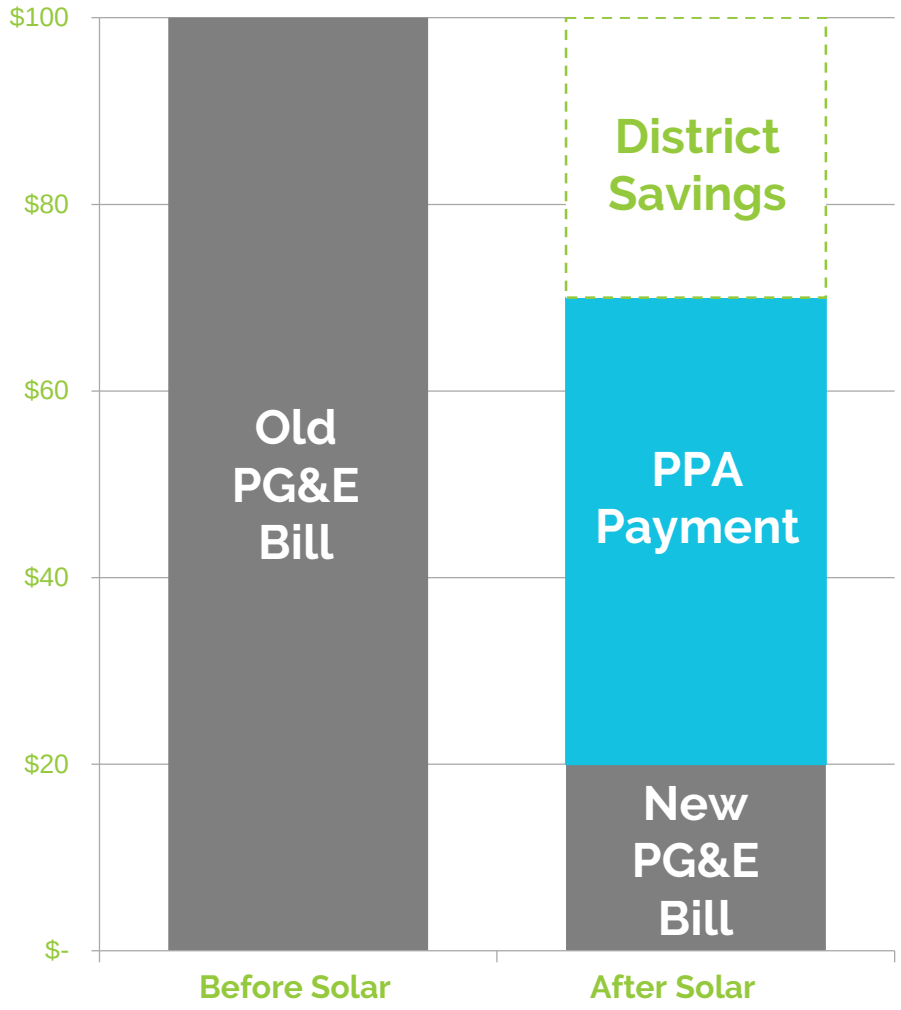
‘A’	$42.1	41 GW
Credit Rate – S&P	billion in revenue	Power Generation Assets

Solar Development Timing

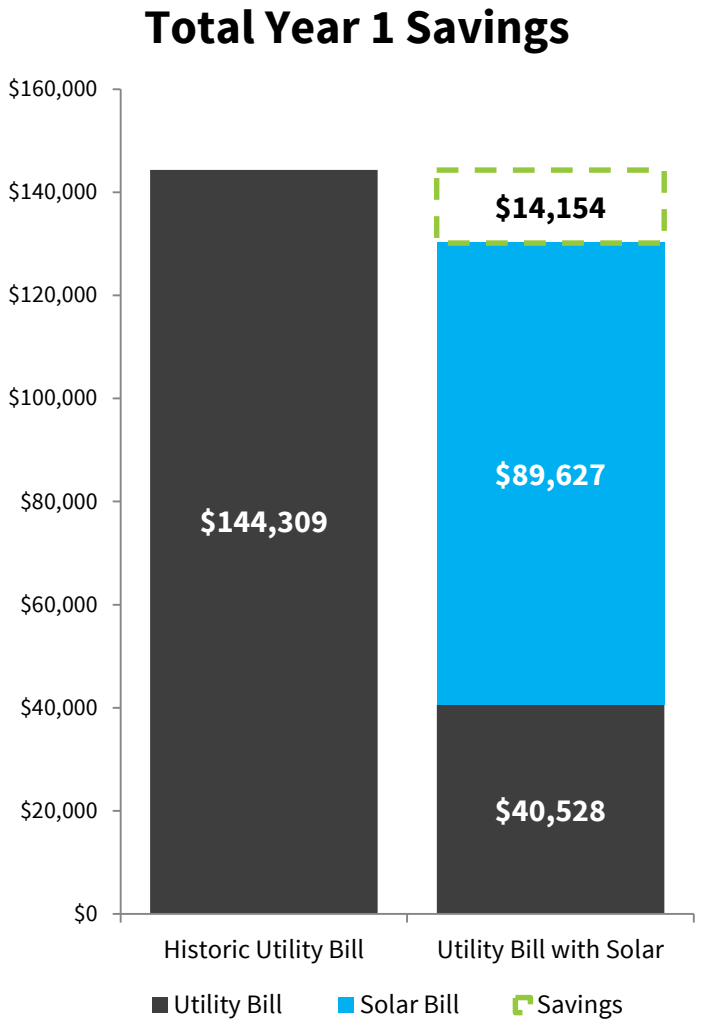


Power Purchase Agreement

- No upfront cost / No Bonding
- Year 1 Savings
- 0% Escalator for 20 Years
- Utility Rate Hedge
- Monetize 30% Tax Credit
- Aligned Partnership
- Free Operations & Maintenance
- Guaranteed Performance



SVUSD Solar Strategy

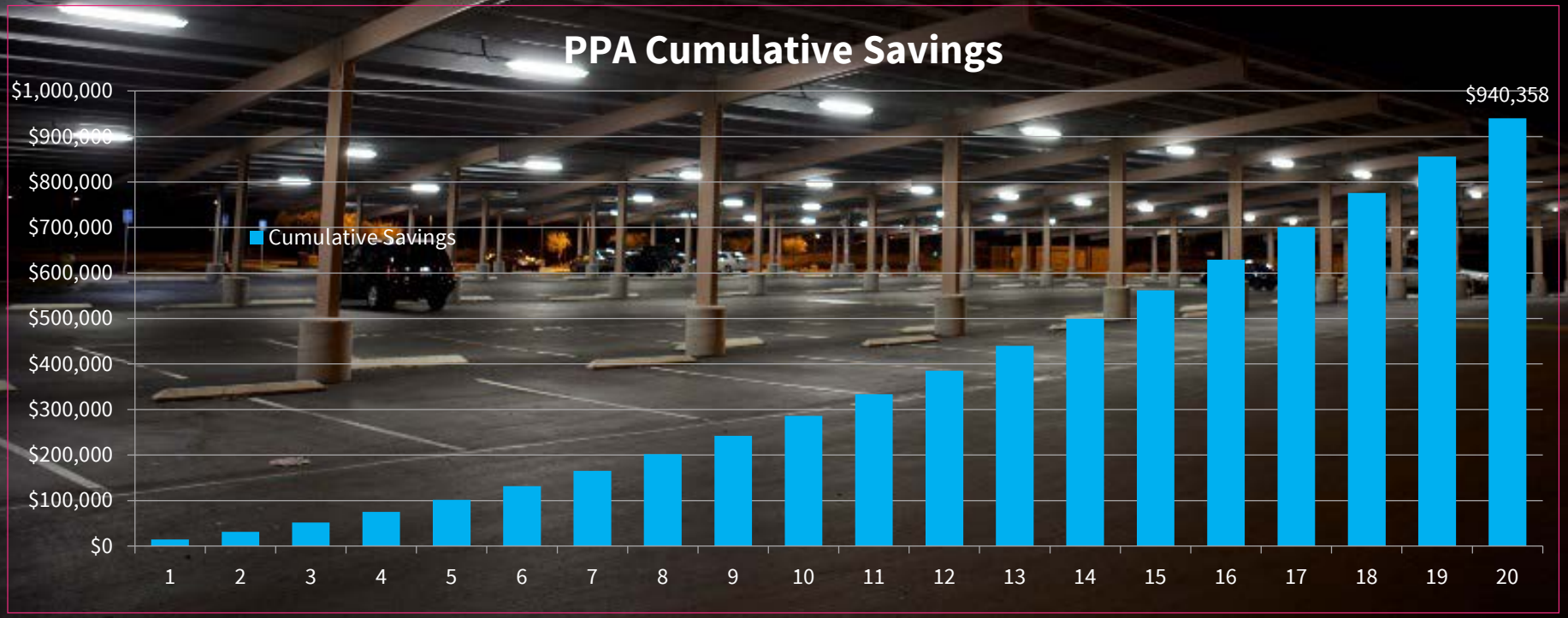


- District Savings
  - $14K Year 1 bill reduction
  - 10% Savings
  - $940K savings over 20 years
- Net Energy Metering
- Flat Energy Rates
- Energy Efficiency Headroom
- DSA Pre-Checked Designs
- Fast Track IX Studies
- Timing: Summer 2018

Assumes 3% Annual Utility Rate Increase

Portfolio Pricing & Savings

Site	PPA Rate	System Size (kW)	System Production (kWh)	% Energy Offset	Current Bill	Year 1 Savings	Year 1 Savings (%)	20 Year Savings
Scotts Valley HS	$0.1550	282	457,685	82%	$117,646	$11,536	10%	$753,867
Vine Hill ES	$0.1900	61	98,348	80%	$26,663	$2,618	10%	$186,491
Total	**$0.1612**	**343**	**556,033**	**81%**	**$144,309**	**$14,154**	**10%**	**$940,358**



Scotts Valley HS – 282KW

- **80% Energy Offset**
- **$11K Savings Y1 (10%)**
- **$753K Savings Y20**
- **Design Features:**
  - LED Canopy Lighting
  - Boring reduces asphalt / pavement disruption
  - ADA Compliance
  - Some Trees Removed
  - 11' Min Clearance



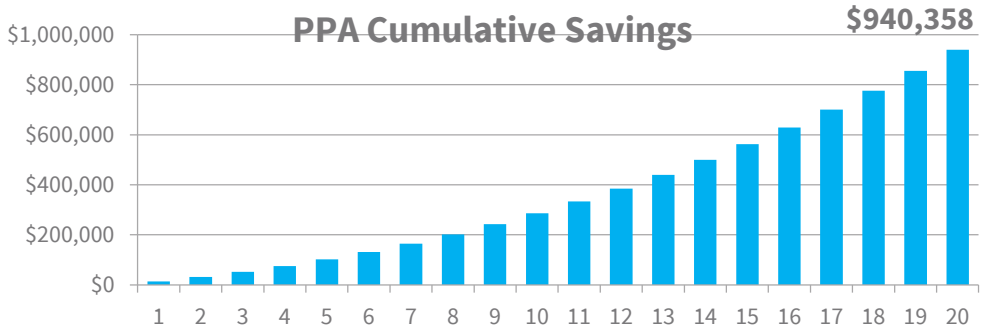
Vine Hill ES– 61KW

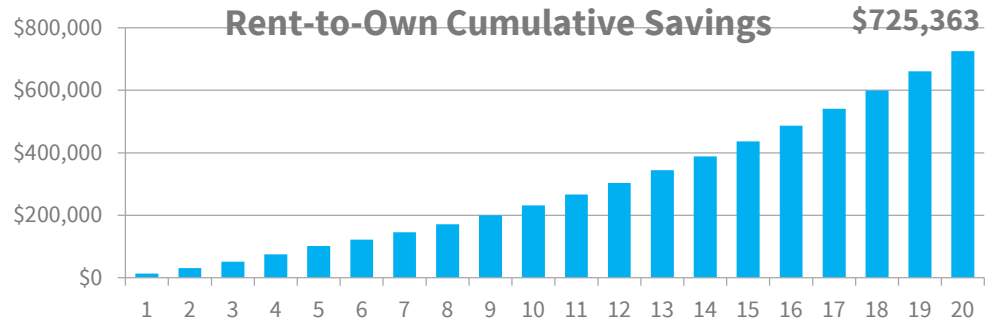
- **80% Energy Offset**
- **$2.6K Savings Y1 (10%)**
- **$186K Savings Y20**
- **Design Features:**
  - 0 Trees Removed
  - LED Canopy Lighting
  - Step-Down XFMR
  - ADA Compliance
  - 11' Min Clearance

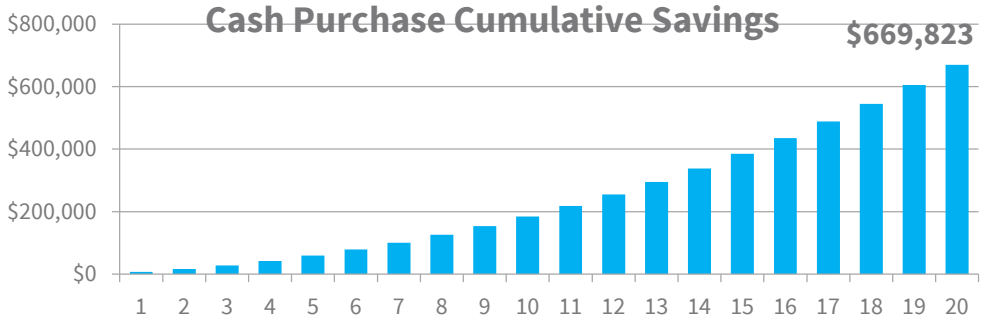


Procurement Methods & Savings

- PPA
  - $0 Cash Outlay
  - Federal Tax Credits
  - Maximize Savings
  - Free O&M
- Rent to Own:
  - $1.07M Invested in Y6
  - Federal Tax Credits
  - Optionality
- Cash Purchase
  - $1.35M Invested In Y0
  - 15 Year Payback
  - 5% IRR
  - No Federal Tax Credit

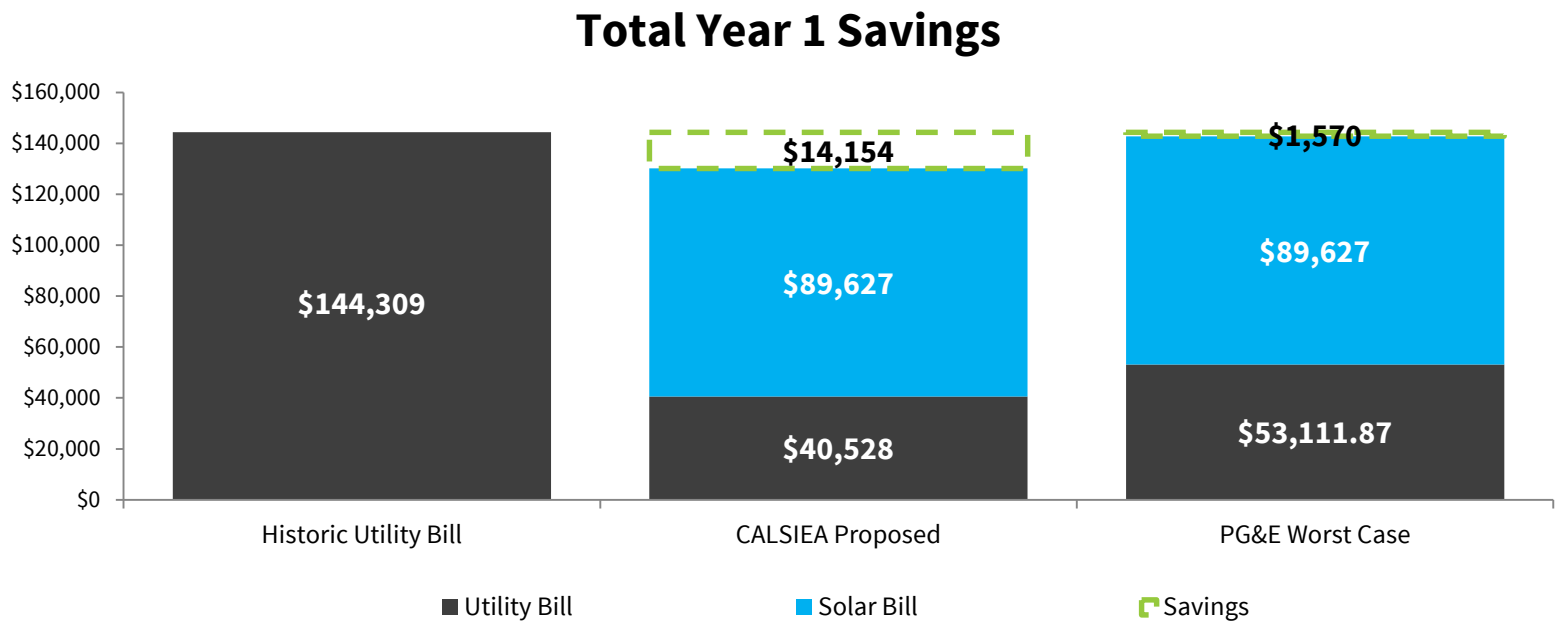






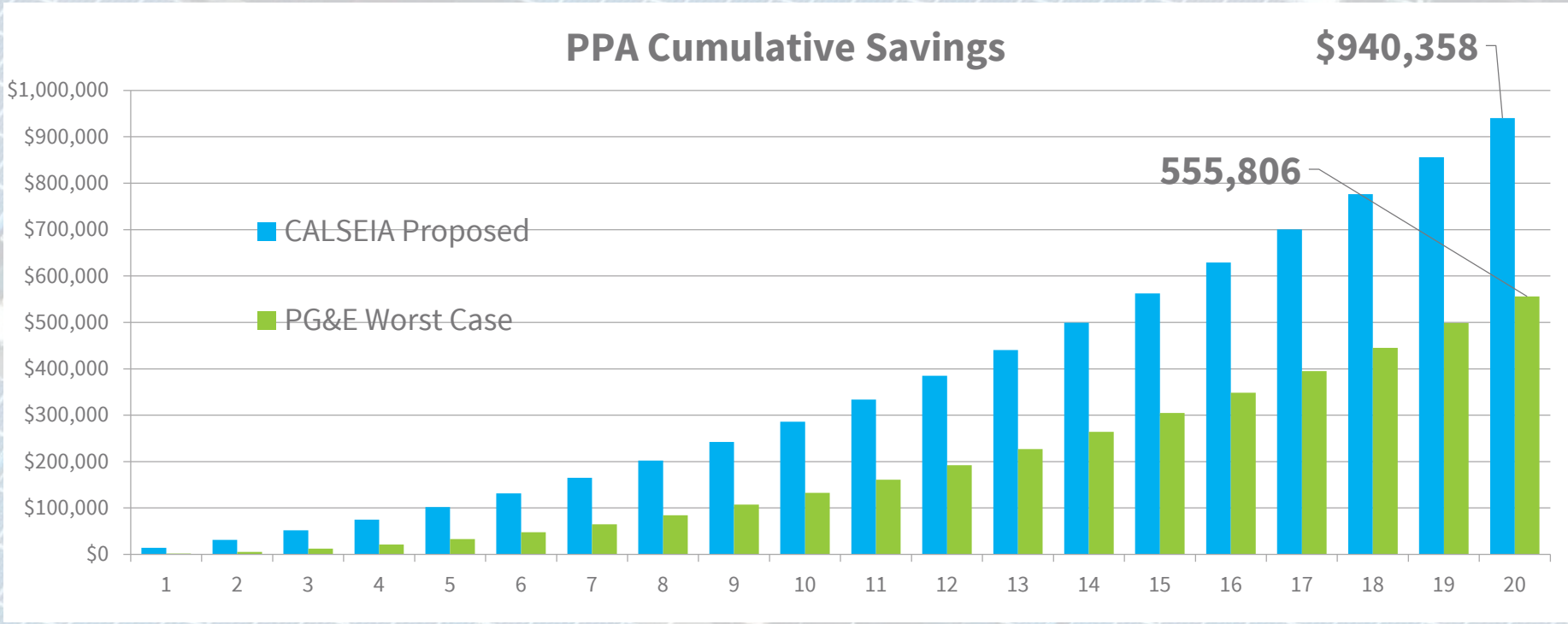
See Appendix for full Cashlfows & Asusmptions. Assumes 3% Annual Utility Rate Increase, 3.0% Coupon, 20 Year Debt

TOU 2.0



- Peak TOU Period
  - Current 12-6PM
  - PG&E Proposed: 5-10PM
  - CALSEIA: 3-9PM
- CPUC Decision – December 2017
- All Sites Save in All Scenarios

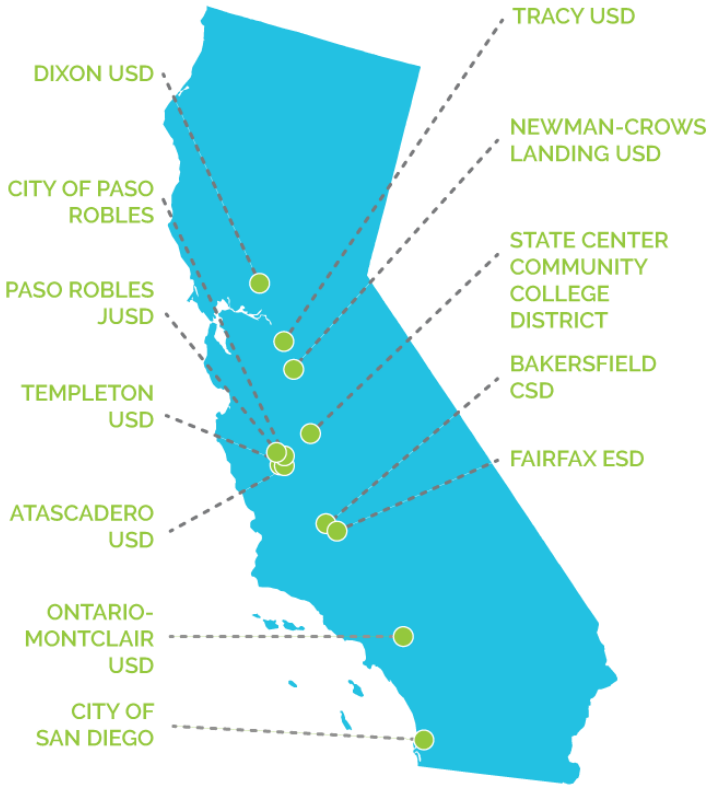
Savings Scenarios



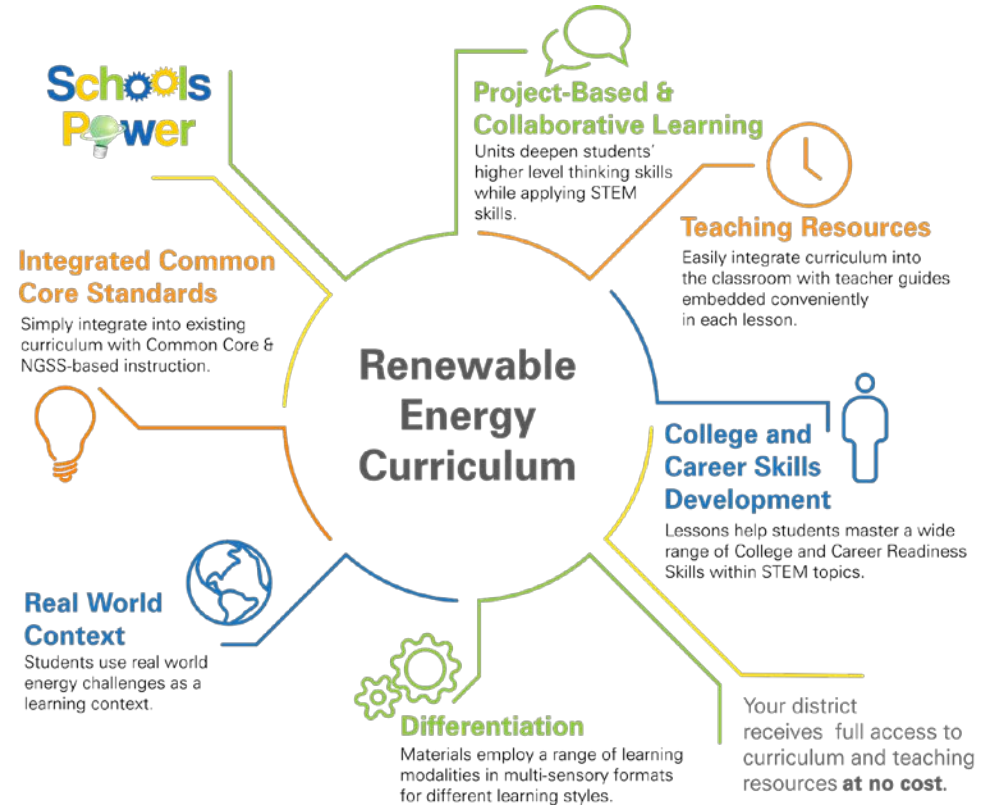
SPURR RFP Winning Provider

- **School Project for Utility Rate Reduction**
  - Buying Consortium of 200+ USDs & CCDs
  - Aggregated Procurement
- **Renewable Energy Aggregated Procurement (REAP)**
  - Standardized Pre-vetted PPA Contract
  - Standardized Pricing
  - Standardized Terms
- **Contracts with 10+ Districts & Muni**

SPURR
Buying Together. Buying Better.



Schools Power Curriculum





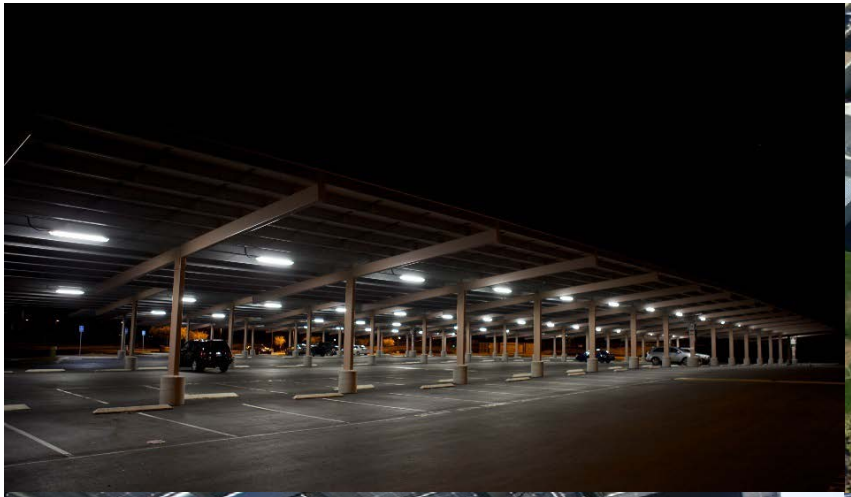


EV Charging Stations

- 2 Included at SVHS
- No upfront cost
- Installation Included
- Dual Wall Mount or Pedestal Mount
- Access Control
- Retractable Cords
- Revenue Collection Available



Carports Up Close









Conclusions & Next Steps

- **Conclusions**
  - Save 14KYear 1
  - Save over 20 Years
  - Flat Electricity Rates
  - Solar Education
  - Summer 2018
- **Next Steps**
  - Feedback
  - Contract Negotiations





FOREFRONT POWER

References

- Bakersfield CSD – 1.7MW
  - Marcos Rodriguez, Director of Facilities
  - mrodriguez@bcsd.com
  - 661-631-5883
- Paso Robles JUSD – 1.7MW
  - Duane Wolgamott, Chief Business Official
  - dkwolgamott@pasoschools.org
  - (805) 769-1000 X30106
- Tracy JUSD – 3.4MW
  - Bonny Carter, Director of Facilities
  - bcarter@tusd.net
  - 209-830-3200
- Atascadero USD – 1MW
  - Stu Stoddard, Director of Support Services
  - stustoddard@atasusd.org
  - 805-462-4243
- Newman Crows Landing USD – 1MW
  - Randy Fillpot, Superintendent
  - RFillpot@nclusd.k12.ca.us
  - 209-862-2933









References - Continued

- Los Altos SD – 1.4MW
  - Randy Kenyon, Chief Business Official
  - rkenyon@lasdschools.org
  - 650 947-1150
- State Center CCD – 7.7MW
  - Christine D. Miktarian, P.E., Associate Vice Chancellor, Business & Operations
  - christine.miktarian@scccd.edu
  - 559-244-5917
- Dixon USD – 1MW
  - John Calise, Director Facilities and Operations
  - john.calise@dixonusd.org
  - (707) 693-6300 x-8059
- Irvine USD – 4.5MW
  - Joe Hoffman, Director Ops & Facilities
  - JoeHoffman@iusd.org
  - 949-936-5303
- Fairfax SD – 500KW
  - Michael Coleman, District Superintendent
  - Mcoleman@fairfax.k12.ca.us
  - 661.366.7221









Project Cashflows

Project	Total
Year 1 Savings	$14,154
Cumulative Savings	$940,358
Payback Period	Immediate

Financial Assumptions

Parameter	*Value*
Year 1 PPA Rate ($/kWh)	$0.1612
PPA Rate Escalator (%/yr)	0.0%
Utility Rate Escalator (%/yr)	3.0%
Discount Rate (%)	3.0%
% Exported Energy	0.0%
Solar Degradation Rate (%)	0.50%

Year	PPA Rate ($/KWH)	KWH Generated	Historic Utility Bill (without solar)	PPA Payment	New Utility Bill (with solar)	Total Electricity Costs (PPA + Utility)	Net Savings	Cumulative Savings	Cumulative NPV Savings
1	0.1612	556,033	144,309	89,627	40,528	130,155	14,154	14,154	14,154
2	0.1612	553,253	148,638	89,179	42,266	131,445	17,193	31,346	30,846
3	0.1612	550,487	153,097	88,733	44,070	132,803	20,295	51,641	49,975
4	0.1612	547,734	157,690	88,290	45,940	134,230	23,460	75,101	71,445
5	0.1612	544,995	162,421	87,848	47,881	135,729	26,692	101,793	95,160
6	0.1612	542,270	167,294	87,409	49,893	137,302	29,991	131,785	121,031
7	0.1612	539,559	172,312	86,972	51,981	138,953	33,360	165,145	148,969
8	0.1612	536,861	177,482	86,537	54,146	140,683	36,799	201,944	178,891
9	0.1612	534,177	182,806	86,104	56,390	142,494	40,312	242,256	210,713
10	0.1612	531,506	188,291	85,674	58,718	144,391	43,899	286,155	244,358
11	0.1612	528,849	193,939	85,245	61,131	146,376	47,563	333,718	279,750
12	0.1612	526,204	199,757	84,819	63,632	148,451	51,306	385,024	316,814
13	0.1612	523,573	205,750	84,395	66,225	150,621	55,130	440,154	355,481
14	0.1612	520,955	211,923	83,973	68,913	152,887	59,036	499,190	395,682
15	0.1612	518,351	218,280	83,553	71,700	155,253	63,027	562,217	437,350
16	0.1612	515,759	224,829	83,135	74,587	157,723	67,106	629,323	480,423
17	0.1612	513,180	231,574	82,720	77,580	160,299	71,274	700,598	524,839
18	0.1612	510,614	238,521	82,306	80,681	162,987	75,534	776,132	570,538
19	0.1612	508,061	245,676	81,895	83,894	165,789	79,888	856,019	617,464
20	0.1612	505,521	253,047	81,485	87,223	168,708	84,338	940,358	665,561
Total		**10,607,944**	**$3,877,637**	**$1,709,901**	**$1,227,378**	**$2,937,279**	**$940,358**	**$940,358**	**$665,561**

Project Cashflows - Cash Purchase

Project	Total
Year 1 Savings	$103,781
Cumulative Savings	$669,823
Cumlative NPV Savings	$468,328
IRR	5%
System Size	343

Financial Assumptions

Parameter	*Value*
Year 1 PPA Rate ($/kWh)	0.0000
PPA Rate Escalator (%/yr)	0.0%
Utility Rate Escalator (%/yr)	3.0%
Discount Rate (%)	3.0%
Solar Degradation Rate (%)	0.5%
O&M Expense / KW	$18.00
O&M Escalator	3.0%
Buyout Value ($/W)	$3.90
Buyout Year	1.0
Interest Rate	3.0%
Bond Term	20.0

Year	PPA Rate ($/KWH)	KWH Generated	Historic Utility Bill (without solar)	PPA & Storage Payment	New Utility Bill (with solar)	Total Electricity Costs (PPA + Utility)	Lease Payment	O&M Expense	Electricity Expense Savings	Cumulative Savings	Cumulative NPV Savings
1	0.0000	556,033	144,309	0	40,528	40,528	(90,734)	(6,169)	103,781	6,878	6,878
2	0.0000	553,253	148,638	0	42,266	42,266	(90,734)	(6,354)	106,372	16,162	15,892
3	0.0000	550,487	153,097	0	44,070	44,070	(90,734)	(6,544)	109,028	27,912	26,967
4	0.0000	547,734	157,690	0	45,940	45,940	(90,734)	(6,741)	111,750	42,187	40,031
5	0.0000	544,995	162,421	0	47,881	47,881	(90,734)	(6,943)	114,540	59,050	55,013
6	0.0000	542,270	167,294	0	49,893	49,893	(90,734)	(7,151)	117,400	78,565	71,847
7	0.0000	539,559	172,312	0	51,981	51,981	(90,734)	(7,366)	120,332	100,797	90,466
8	0.0000	536,861	177,482	0	54,146	54,146	(90,734)	(7,587)	123,336	125,813	110,806
9	0.0000	534,177	182,806	0	56,390	56,390	(90,734)	(7,814)	126,416	153,680	132,805
10	0.0000	531,506	188,291	0	58,718	58,718	(90,734)	(8,049)	129,573	184,471	156,403
11	0.0000	528,849	193,939	0	61,131	61,131	(90,734)	(8,290)	132,809	218,255	181,542
12	0.0000	526,204	199,757	0	63,632	63,632	(90,734)	(8,539)	136,125	255,107	208,165
13	0.0000	523,573	205,750	0	66,225	66,225	(90,734)	(8,795)	139,525	295,103	236,217
14	0.0000	520,955	211,923	0	68,913	68,913	(90,734)	(9,059)	143,009	338,319	265,645
15	0.0000	518,351	218,280	0	71,700	71,700	(90,734)	(9,331)	146,581	384,835	296,398
16	0.0000	515,759	224,829	0	74,587	74,587	(90,734)	(9,610)	150,242	434,732	328,425
17	0.0000	513,180	231,574	0	77,580	77,580	(90,734)	(9,899)	153,994	488,093	361,677
18	0.0000	510,614	238,521	0	80,681	80,681	(90,734)	(10,196)	157,840	545,003	396,109
19	0.0000	508,061	245,676	0	83,894	83,894	(90,734)	(10,502)	161,783	605,550	431,674
20	0.0000	505,521	253,047	0	87,223	87,223	(90,734)	(10,817)	165,823	669,823	468,328
Total		**10,607,944**	**$3,877,637**	**$0**	**$1,227,378**	**$1,227,378**	**-$1,814,683**		**$2,650,259**	**$669,823**	**$468,328**

Project Cashflows - Rent-to-Own

Project	Total
Year 1 Savings	$14,154
Cumulative Savings	$725,363
Cumlative NPV Savings	$517,524
System Size	343

Financial Assumptions

Parameter	*Value*
Year 1 PPA Rate ($/kWh)	0.1612
PPA Rate Escalator (%/yr)	0.0%
Utility Rate Escalator (%/yr)	3.0%
Discount Rate (%)	3.0%
Solar Degradation Rate (%)	0.5%
O&M Expense / KW	$18.00
O&M Escalator	3.0%
Buyout Value ($/W)	$3.10
Buyout Year	6.0
Interest Rate	3.0%
Bond Term	15.0

Year	PPA Rate ($/KWH)	KWH Generated	Historic Utility Bill (without solar)	PPA Payment	New Utility Bill (with solar)	Total Electricity Costs (PPA + Utility)	Lease Payment	O&M Expense	Electricity Expense Savings	Cumulative Savings	Cumulative NPV Savings
1	0.1612	556,033	144,309	89,627	40,528	130,155	0	0	14,154	14,154	14,154
2	0.1612	553,253	148,638	89,179	42,266	131,445	0	0	17,193	31,346	30,846
3	0.1612	550,487	153,097	88,733	44,070	132,803	0	0	20,295	51,641	49,975
4	0.1612	547,734	157,690	88,290	45,940	134,230	0	0	23,460	75,101	71,445
5	0.1612	544,995	162,421	87,848	47,881	135,729	0	0	26,692	101,793	95,160
6	0.0000	542,270	167,294	0	49,893	49,893	(89,881)	(7,151)	117,400	122,162	112,730
7	0.0000	539,559	172,312	0	51,981	51,981	(89,881)	(7,366)	120,332	145,247	132,063
8	0.0000	536,861	177,482	0	54,146	54,146	(89,881)	(7,587)	123,336	171,115	153,097
9	0.0000	534,177	182,806	0	56,390	56,390	(89,881)	(7,814)	126,416	199,836	175,770
10	0.0000	531,506	188,291	0	58,718	58,718	(89,881)	(8,049)	129,573	231,480	200,022
11	0.0000	528,849	193,939	0	61,131	61,131	(89,881)	(8,290)	132,809	266,117	225,795
12	0.0000	526,204	199,757	0	63,632	63,632	(89,881)	(8,539)	136,125	303,823	253,034
13	0.0000	523,573	205,750	0	66,225	66,225	(89,881)	(8,795)	139,525	344,671	281,685
14	0.0000	520,955	211,923	0	68,913	68,913	(89,881)	(9,059)	143,009	388,741	311,694
15	0.0000	518,351	218,280	0	71,700	71,700	(89,881)	(9,331)	146,581	436,110	343,011
16	0.0000	515,759	224,829	0	74,587	74,587	(89,881)	(9,610)	150,242	486,860	375,585
17	0.0000	513,180	231,574	0	77,580	77,580	(89,881)	(9,899)	153,994	541,074	409,370
18	0.0000	510,614	238,521	0	80,681	80,681	(89,881)	(10,196)	157,840	598,838	444,318
19	0.0000	508,061	245,676	0	83,894	83,894	(89,881)	(10,502)	161,783	660,238	480,384
20	0.0000	505,521	253,047	0	87,223	87,223	(89,881)	(10,817)	165,823	725,363	517,524
Total		**10,607,944**	**$3,877,637**	**$443,677**	**$1,227,378**	**$1,671,056**	**-$1,348,215**		**$2,206,581**	**$725,363**	**$517,524**

Assumptions

- **Includes:**
  - 10’ minimum canopy clearance
  - DSA Required ADA Upgrades
  - Tree Trimming / Tree Removal
  - Canopy LED Lighting w Title 24 Compliance
  - Existing Light post removal
  - Schools Power Curriculum Included
  - Fast Track IX Process
  - Inspector Fees / Special Testing
  - 2 EV Charging Stations at SVHS
- **Excludes:**
  - Any PG&E Distribution Upgrades
  - Transformer Upgrades (Not anticipated)