



Nogales Unified School District



ENERGY UPDATE – FY19

August 6, 2019

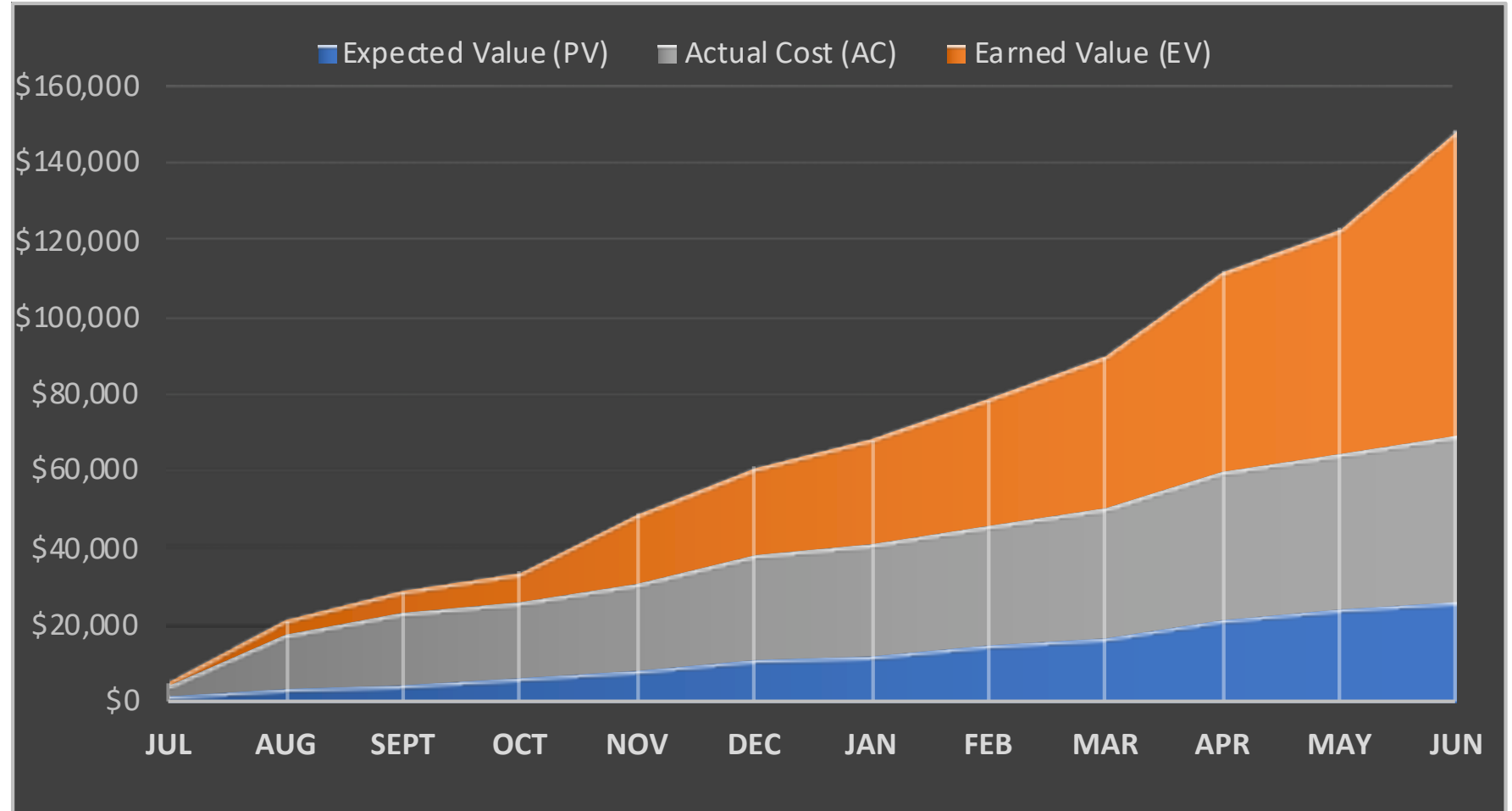
Auriane Koster, Ph.D. – Sustainability Manager
Gabriel Sanchez – Client Data Manager





Earned Value

FY19



Earned Value = \$35,758



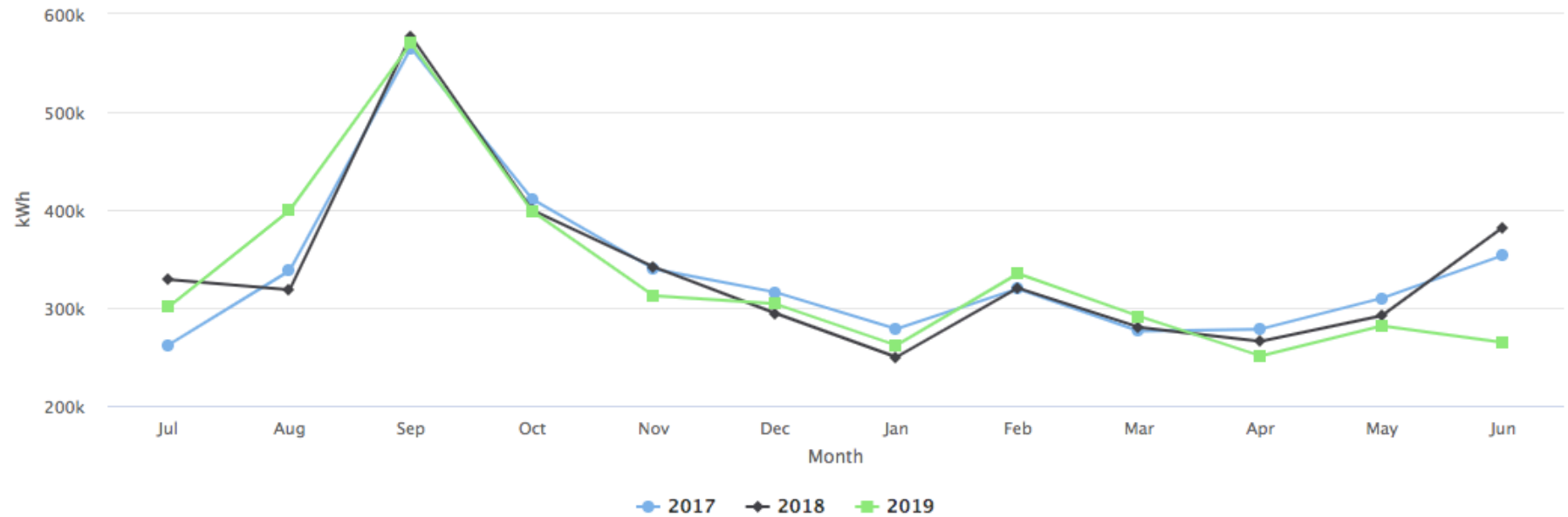
Summary of Electric





Annual Electric (kWh) Compared

FY 17-19





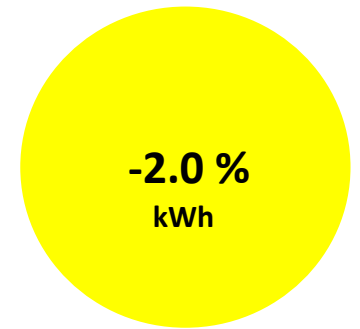
- NUSD decreased 79,991 kWh (2%) and decreased \$33,293 (5%) in FY19 compared to FY18

Electric Usage and Cost

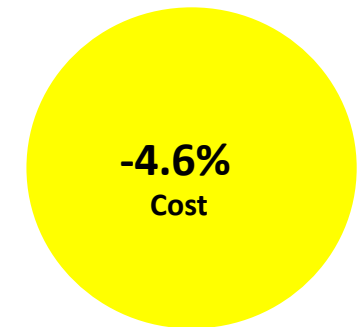
FY19 vs. FY18

Organizational YTD	2019	2018
Total Usage (kWh)	3,970,775	4,050,766
Total Cost	\$695,176	\$728,469
% Change Usage		-2.0% ↓
% Change Cost		-4.6% ↓

Percentage Change Usage



Percentage Change Cost





Electric Comparison

FY19 vs. FY18

Location	2019		2018		Percentage Change	
	Usage (kWh)	Cost (\$)	Usage (kWh)	Cost (\$)	Usage	Cost
Desert Shadows Middle School	368,800	57,085.05	428,320	63,280.90	-13.90 ↓	-9.79 ↓
Mary Welty Elementary	186,224	31,195.41	205,365	34,416.03	-9.32 ↓	-9.36 ↓
District Support Services	56,551	7,323.41	61,383	7,861.67	-7.87 ↓	-6.85 ↓
Challenger Elementary	293,643	50,392.47	307,040	52,607.60	-4.36 ↓	-4.21 ↓
Wade Carpenter Middle School	255,157	47,996.62	264,048	49,248.94	-3.37 ↓	-2.54 ↓
Robert M. Bracker Elementary School	194,400	33,921.06	200,160	33,550.78	-2.88 ↓	1.10 ↑
Francisco Vasquez de Coronado Elementary School	338,343	62,370.15	341,310	69,117.05	-0.87 ↓	-9.76 ↓
Nogales High School	1,326,007	207,275.88	1,331,389	227,340.04	-0.40 ↓	-8.83 ↓
District Office	149,840	22,986.63	149,760	21,749.23	0.05 ↑	5.69 ↑
Pierson High School	295,789	61,924.02	288,660	58,266.87	2.47 ↑	6.28 ↑
A.J. Mitchell Elementary	235,670	57,262.70	227,618	56,090.83	3.54 ↑	2.09 ↑
Lincoln Elementary School	270,351	55,442.35	245,713	54,939.25	10.03 ↑	0.92 ↑



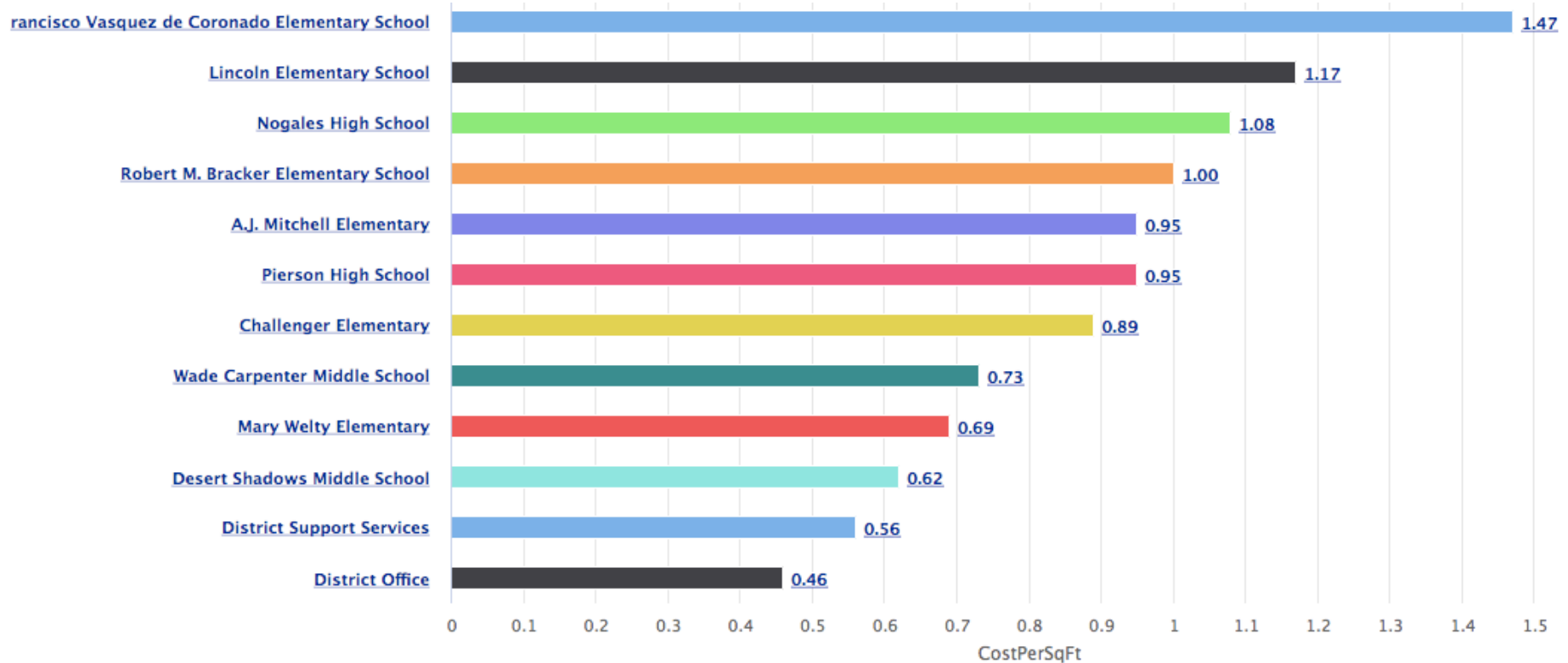


Electric Comparison

Cost/Sqft



July 2018 – June 2019



\$0.80 is the PEP recommended cost/sq. ft. for southern AZ schools
FY18 Schools Average = \$0.99/sqft
FY19 Schools Average = \$0.98/sqft



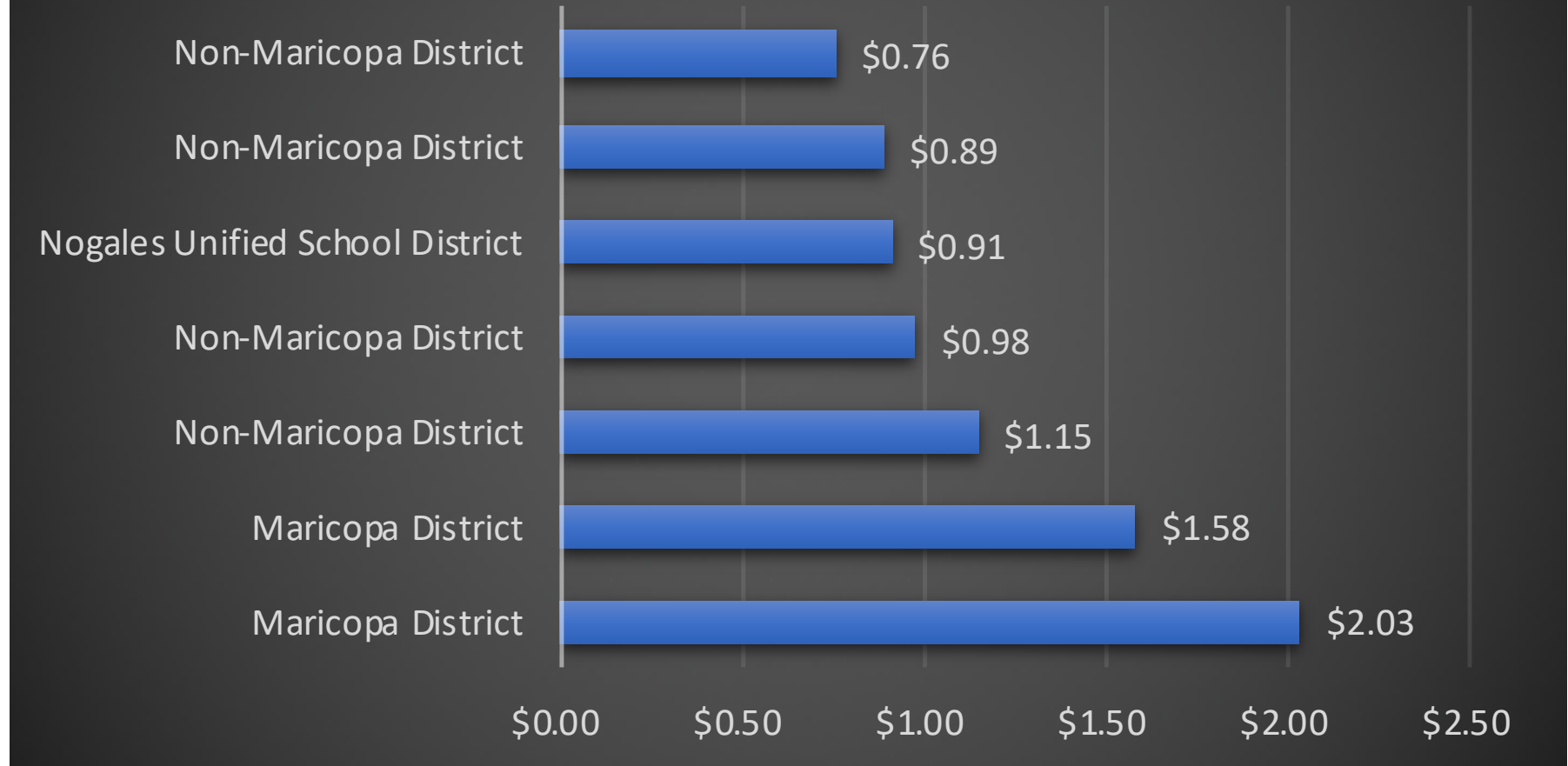
Arizona Unified School Districts

Cost/Sqft



July 2018 – June 2019

FY19 Cost/Sqft



Tables in this report display data from ALL electric and solar bills, and reflects ALL electric usage of all meters at campuses.

Maximum Monthly Demand



Maximum Monthly Demand July 2018 – December 2018

School	Jul (KW)		Aug (KW)		Sep (KW)		Oct (KW)		Nov (KW)		Dec (KW)	
	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018
A.J. Mitchell Elementary	145	116	109	155	160	180	134	137	163	135	122	135
Challenger Elementary	149	122	159	187	194	182	189	184	152	140	146	140
Desert Shadows MS	161	74	231	225	244	234	202	189	183	176	183	176
District Office	61	53	55	62	65	69	63	58	49	52	49	62
Francisco Vasquez de Coronado Elementary School	214	42	165	175	161	147	168	154	161	132	161	132
Lincoln Elementary School	90	70	90	93	128	111	112	98	96	98	100	131
Mary Welty Elementary	66	51	99	94	88	85	84	84	79	71	74	71
Nogales High School	374	303	492	506	488	506	675	508	506	381	506	381
Pierson High School	119	56	119	79	108	120	108	120	108	120	108	144
Robert M. Bracker Elementary School	87	59	128	140	131	136	118	107	99	105	98	105
Wade Carpenter MS	85	54	85	75	101	109	103	102	96	82	77	82

Caution > 350 KW

Demand over 400 KW

KW higher than last year



Maximum Monthly Demand January 2019 – June 2019

School	Jan (KW)		Feb (KW)		Mar (KW)		Apr (KW)		May (KW)		June (KW)	
	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
A.J. Mitchell Elementary	122	53	122	135	122	57	122	39	122	135	122	135
Challenger Elementary	146	67	146	140	146	65	146	62	146	140	155	140
Desert Shadows MS	183	110	183	176	110	110	183	111	183	176	238	176
District Office	50	63	51	64	49	72	49	48	49	54	56	54
Francisco Vasquez de Coronado Elementary School	161	74	161	132	161	72	161	67	161	132	161	132
Lincoln Elementary School	124	113	131	117	128	117	122	46	98	187	98	98
Mary Welty Elementary	74	37	74	71	74	36	74	36	74	71	74	72
Nogales High School	506	289	506	381	506	278	506	303	506	381	506	380
Pierson High School	140	169	154	181	160	157	142	90	120	136	120	136
Robert M. Bracker Elementary School	98	96	98	105	98	96	98	65	108	105	98	105
Wade Carpenter MS	77	67	90	99	89	112	77	75	77	84	78	84

Caution > 350 KW

Demand over 400 KW

KW higher than last year



Maximum Monthly Demand June Percentage Change

School	June (KW)		Location June % Change
	2018	2019	
A.J. Mitchell Elementary	122.3	135	10.40%
Challenger Elementary	154.6	140	-9.42%
Desert Shadows MS	238.1	176	-26.08%
District Office	56	54	-3.57%
Francisco Vasquez de Coronado Elementary School	160.8	132	-17.91%
Lincoln Elementary School	97.92	98	0.08%
Mary Welty Elementary	73.92	72	-2.60%
Nogales High School	506.4	380	-24.96%
Pierson High School	119.7	136	13.62%
Robert M. Bracker Elementary School	97.92	105	7.23%
Wade Carpenter MS	77.92	84	7.80%



FY19 Accomplishments





Accomplishments

- Break Energy Checklist
- Quarterly data meetings with administration
- Presented to students
 - Desert Shadows 7th grade Science
- Recycling has continued successfully
- Quarterly Green Team meeting with teachers
- FY19 “Reduce-Use” competition
 - Pizza party for all Desert Shadows staff
 - Popcorn party for Welty Green Team/Recycling Club kiddos
- Revamped energy-savings program on district website
- Acquired aerators for all district faucets



FY20 Opportunities





Energy Saving

Opportunities

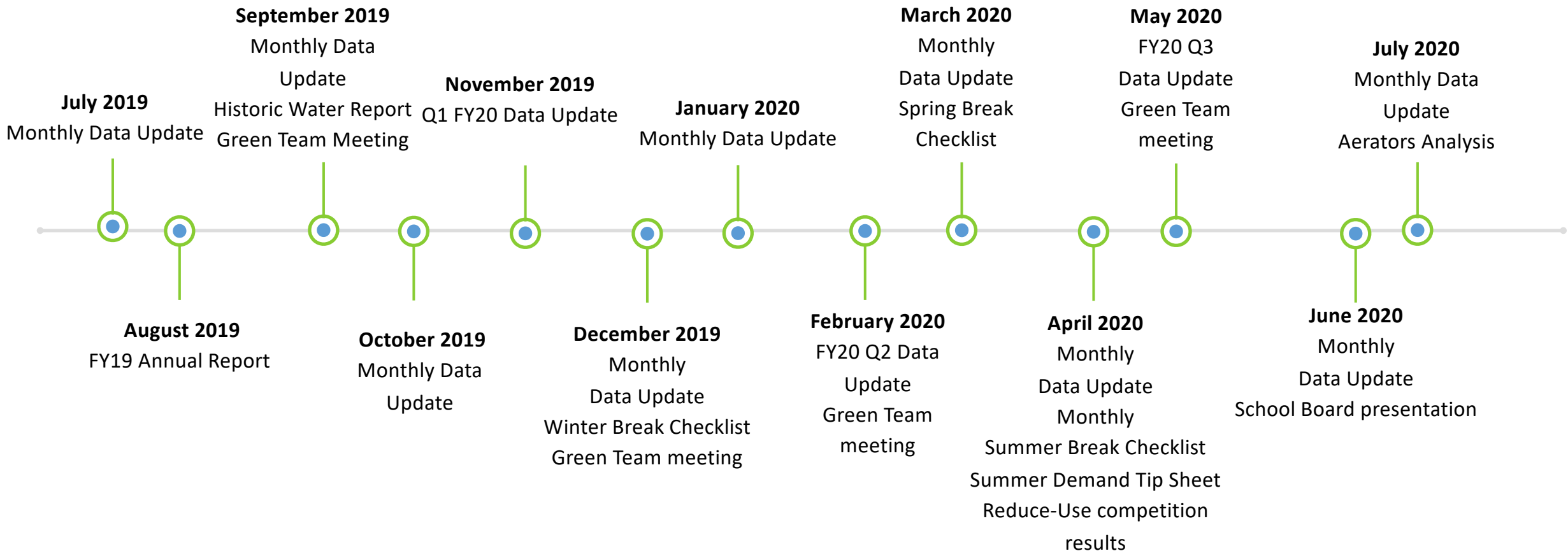
- Enforce setpoints
- Adjust setpoints for optimal savings
- Ensure occupied and unoccupied setpoints are set
- Support Green Teams at all schools
 - Refocus on electricity and water savings
- Please create online access for water data
- Track water and provide strategies
- Install all faucet aerators
 - Track impact of aerators



Nogales Unified School District Deliverable Roadmap



PIERCE ENERGY PLANNING
HELPING SAVE ENERGY DOLLARS





Project Team

Contact Information



Auriane Koster, Ph.D.
Sustainability Manager
Auriane@energyplanning.org
(401)742-9873

Gabriel Sanchez
Client Data Manager
gabriel@energyplanning.org