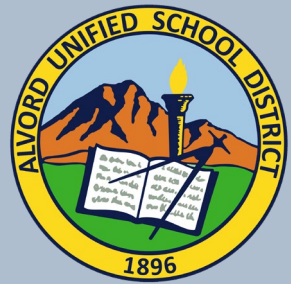


## Exhibit A: Analysis

# ALVORD UNIFIED SCHOOL DISTRICT ENERGY MASTER PLAN

## EXHIBIT A: ANALYSIS FOR PHASE III BOARD CONSIDERATION ON JUNE 3, 2021



			Phase I	Phase II	Phase III		Alvord HS	Arizona MS	Arlanza ES	Collett ES	Facilities (M.O.T.)	Foothill ES	Hillcrest HS	La Granada ES	La Sierra HS	Lake Hills ES	Loma Vista MS	McAuliffe ES	Myra Linn ES	Norte Vista HS	Orrenmaa ES	Stokoe ES	Promenade ES	RMK ES	Terrace ES	Twinhill ES	Valley View ES	Villegas MS	Wells MS
			Phase I	Phase II	Phase III																								
			Phase II	Phase III	Phase III																								
			Future Phases	Future Phases	Future Phases																								
BUILDING AUTOMATION SYSTEM (BAS)	New Wi-Fi Based BAS															✓							✓		✓		✓		
	New BACnet Compatible BAS						✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓			✓	✓		✓	✓		✓	
	Advanced BAS Programming								✓	✓		✓	✓			✓	✓	✓			✓								
	Integrate Occupancy Sensors						✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Exterior Lighting Control						✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Demand Control Ventilation							✓	✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	BAS Training						✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
HEATING & COOLING	New High Efficiency HVAC Units (rooftop, wall-mount + split systems)	Completed (Phase I & II)	2		26	30	2	12	7	15			15	7	13				21	92				13	7		15		34
		Phase III Modernizations*		24	11	19		9	11			15	25	52			22	25	13	66	11		20	14	7		21		
		Future Phases	19	5	11			4	4			5	101	1	15	41	2	3	6	6	42	43	8	11	27	76			
	Central Plant Systems	New High Efficiency Chiller/ Re-Condition Chiller		1								1		2				1	1										
		New High Efficiency Boiler		2								1						1	2										
		Other Modernizations**		37									21					21	21										
	Add High Efficiency Air Conditioning to Gym														✓				✓										
LIGHTING	Interior Fluorescent Lighting Upgrades						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
	Interior LED Lighting Modernization						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Exterior LED Lighting Modernization						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Install/Modify Dual Technology Occupancy Sensors						✓	✓	✓	✓		✓		✓	✓	✓		✓					✓	✓	✓	✓	✓		
	Fixture Mounted Dimming Sensor							✓			✓		✓	✓	✓				✓		✓	✓				✓		✓	
SOLAR	Pool Solar Thermal Water Heating											✓			✓			✓											
	Solar Shade Structures												✓		✓	✓			✓			✓				✓			
OTHER	Non-Solar Shade Structures								✓	✓		✓		✓			✓				✓								

\* New HVAC units will have MERV-13 filters & economizers for enhanced ventilation  
\*\* Modernizations include new pumps, air handling units, fan coil units, and/or variable air volume (VAV) boxes; see mechanical inventory for further details

Utility Savings Summary for the Alvord USD Phase III Energy Infrastructure Modernization Program		
Cost of Phase III Energy Infrastructure Modernizations & Solar		\$18,987,222
Total Utility Reduction Generated by Phase III		\$26,985,517
Year	Total Projected Utility Usage Without Implementing the Phase III Program	Total Projected Utility Usage After Implementing the Phase III Program
1	\$1,709,184	\$1,268,794
2	\$1,792,934	\$1,320,571
3	\$1,880,957	\$1,374,457
4	\$1,973,479	\$1,430,538
5	\$2,070,739	\$1,488,904
6	\$2,172,989	\$1,549,648
7	\$2,280,494	\$1,612,865
8	\$2,393,535	\$1,678,658
9	\$2,512,406	\$1,747,129
10	\$2,637,420	\$1,818,390
11	\$2,768,905	\$1,897,697
12	\$2,907,209	\$1,980,461
13	\$3,052,699	\$2,066,834
14	\$3,205,760	\$2,156,971
15	\$3,366,800	\$2,251,038
16	\$3,553,640	\$2,368,441
17	\$3,751,606	\$2,492,143
18	\$3,961,397	\$2,622,491
19	\$4,183,761	\$2,759,851
20	\$4,419,493	\$2,904,610
21	\$4,669,441	\$3,057,176
22	\$4,934,509	\$3,217,981
23	\$5,215,660	\$3,387,481
24	\$5,513,921	\$3,566,157
25	\$5,830,387	\$3,754,520
TOTALS	\$82,759,325	\$55,773,808

**Note:** The "Base Case" is the projected utility cost in the absence of implementing any aspect of the subject energy service contract. The "Proposed Case" is the projected utility cost after implementing the subject energy service contract. In "Both Cases", utility usage is escalated at 4% annually, per California Energy Commission (CEC) guidelines. In the "Base Case", projected utility usage is escalated at an additional 2% for Years 1-15 and increased to 3%, beginning Year 16, to account for continuing degradation of the building automation systems (BAS) and HVAC systems, associated with equipment age. The "Proposed Case" degradation is accounted for as follows: degradation for the BAS and HVAC systems is 0.5% for Years 11-15 and increased to 2%, beginning Year 16. Solar PV degradation factor is 0.25% per year, for Years 2-25.