

STATE OF HAWAII
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

December 5, 2023

The Honorable Ronald D. Kouchi, President
and Members of the Senate
State Capitol, Room 409
Honolulu, Hawaii 96813

The Honorable Scott K. Saiki, Speaker
and Members of the House of Representatives
State Capitol, Room 431
Honolulu, Hawaii 96813

Re: Hawaii State Department of Education Annual Report on Sustainable Schools Initiative

Dear President Kouchi, Speaker Saiki, and Members of the Legislature:

For your information and consideration, a copy of the annual report, Sustainable Schools Initiative is being transmitted, pursuant to Section 302A-1510, Hawaii Revised Statutes (HRS). In accordance with Section 93-16, HRS, the report may be viewed electronically at:
<https://www.hawaiipublicschools.org/VisionForSuccess/SchoolDataAndReports/StateReports/Pages/Legislative-reports.aspx>

Should you have any questions, please contact Ken Kakesako, Director of the Policy, Innovation, Planning and Evaluation Branch, Office of Strategy, Innovation and Performance, via email at ken.kakesako@k12.hi.us or by phone at (808) 282-3430.

Sincerely,

Keith T. Hayashi
Superintendent

KTH:at
Attachment

c: Legislative Reference Bureau
Hawaii State Public Library System
University of Hawaii
Office of Facilities and Operations



State of Hawaii
Department of Education

Annual Report on Sustainable Schools Initiative

November 2023

Section 302A-1510, Hawaii Revised Statutes (HRS), requires the Hawaii State Department of Education (Department) to annually report on the following: 1) The overall progress toward the net-zero energy goal set forth in Section 302A-1510(a), HRS; 2) Its plans and recommendations to advance the net-zero goal set forth in Section 302A-1510(a), HRS; 3) Different types of cooling measures implemented; and 4) Any challenges or barriers encountered or anticipated by the Department in meeting the net-zero energy goal set forth in Section 302A-1510(a), HRS.

**Annual Report on the Hawaii State Department of Education’s (Department)
Sustainable Schools Initiative 2024**

**1) OVERALL PROGRESS TOWARD THE NET-ZERO ENERGY GOAL SET FORTH
IN SECTION 302A-1510(a), HRS:**

Hawaii School Facilities Energy Report Comparison of Fiscal Year (FY) 2022 and FY 2023				
	FY 2022		FY 2023	
School Facilities Energy	kWh	\$M	kWh	\$M
Utility Energy ⁽¹⁾	107,580	\$39.6	112,108	\$50.4
Renewable Energy	22,479	\$5.4	21,924	\$5.3
Total Energy	130,060	\$45.0	134,032	\$55.7
1. Utility Energy includes Hawaiian Electric Company (HECO), Hawaii Electric Light Company (HELCO), Kauai Island Utility Cooperative (KIUC), and Maui Electric Company (MECO).				

The year-over-year (YOY) percentage changes and the percent of total energy are provided in the table below:

	Year-Over-Year Change (%)		Percent of Total Energy (kWh)	
	kWh	\$	FY 2022	FY 2023
School Facilities Energy				
Utility Energy ⁽¹⁾	4%	27%	83%	84%
Renewable Energy	-2%	-2%	17%	16%
Total Energy	3%	24%	100%	100%

Note: Figures in table are rounded to nearest percent

For the full Fiscal Year (FY) 2023, total electricity consumption across all public campuses statewide increased 3% from FY 2022. The total cost of electricity increased by 24%.

YOY, utility electricity consumption increased 4%. The YOY cost of utility electricity increased 27% due to both increased consumption and higher utility rates. The average cost of utility electricity for FY 2023 was \$0.4494 per kilowatt-hour (kWh) compared to \$0.3679 in FY 2022, an increase of 22%.

YOY, renewable electricity consumption across all public campuses statewide was down 2% from FY 2022. Although average contractual rates paid to Power Purchase Agreement providers increased by 0.6%, the annual cost of renewable electricity was lower by 2%.

School Electricity Consumption

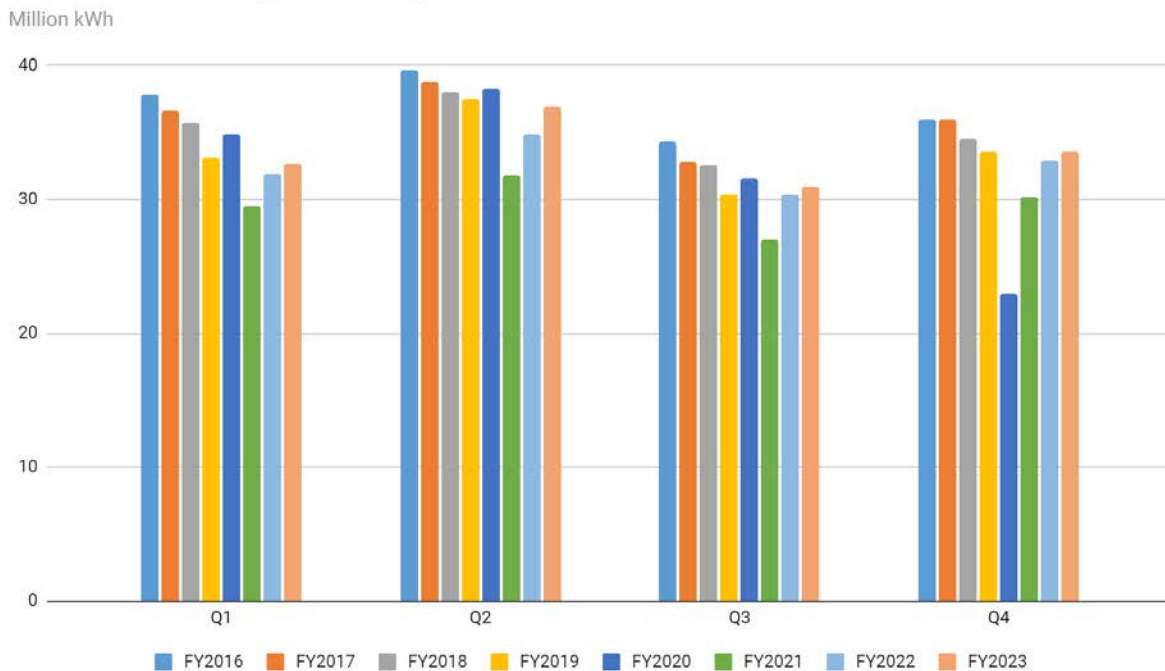


Figure 1 - Total Electricity Consumption by FQ

The major factor affecting consumption during FY 2022 was the increased need to provide ventilation and air conditioning for purposes of air quality in school facilities. On a YOY basis, the consumption in all quarters of FY 2023 increased slightly over FY 2022. Consumption has essentially recovered to pre-pandemic levels.

In FY 2023, the solar percent consumption of renewable energy decreased to 16% from 17% in FY 2022. This was due primarily to a 2% reduction in solar energy production. Solar production peaked in FY 2020 at 23,903,943 kWh and has fallen for three straight years. Operational problems with photovoltaic (PV) units at several schools have reduced production from their design.

Solar Fraction

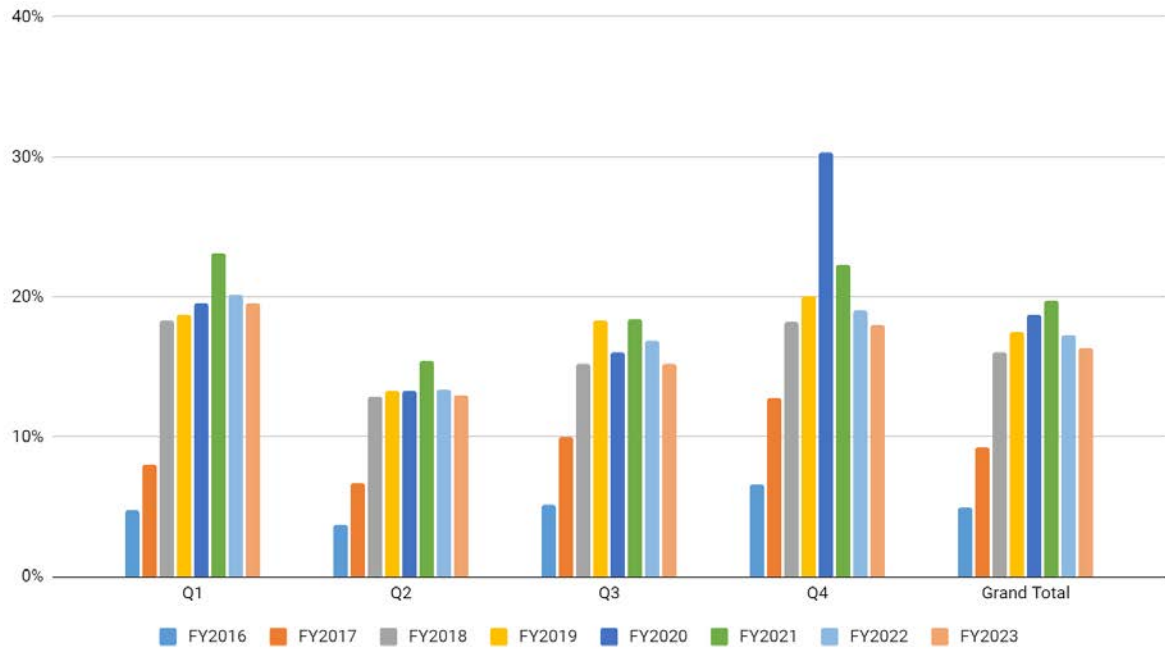


Figure 2 – Solar Fraction of Electricity Consumption for FY 2016-2022

Solar Production

Million kWh

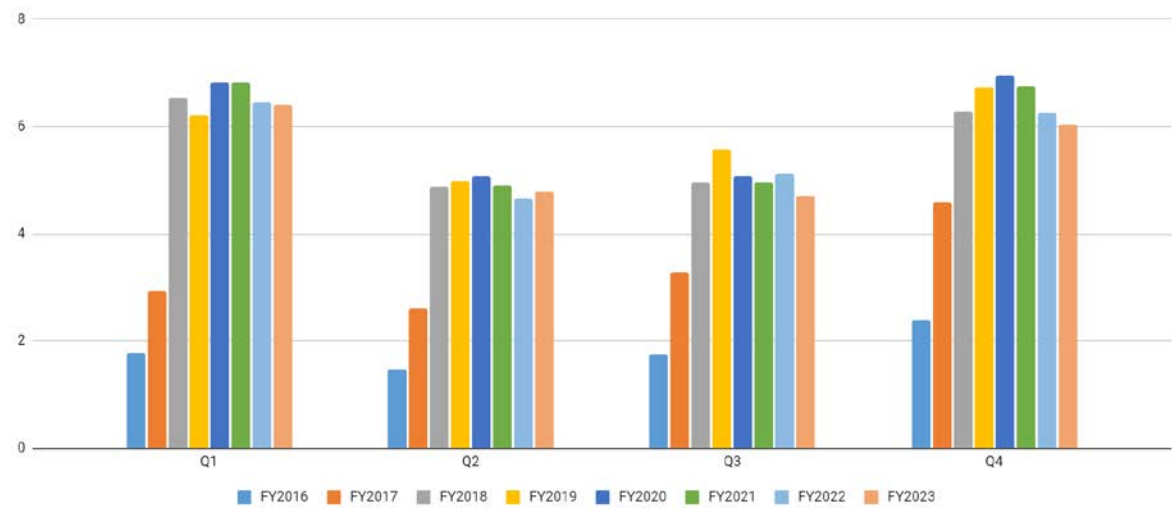


Figure 3 – Solar Energy Production for FY 2016-2022

2) PLANS AND RECOMMENDATION TO ADVANCE THE NET-ZERO ENERGY GOAL SET FORTH IN SECTION 302A-1510(a), HRS:

Over the past year, it has become apparent that it is the intent of oil producers to maintain the cost of petroleum and other fossil-based fuels at a consistent, high level in order to achieve stable revenues. Unlike the 1980s, oil producers have shown a willingness to reduce production levels and accept lower market shares in order to provide sustainable funding to national budgets. For this reason, the cost of fossil-based utility electricity is expected to remain elevated, averaging on the order of \$0.35 - \$0.45 per kWh.

On the other hand, recent negotiations for onsite solar PV electricity is averaging \$0.2712 per kWh.

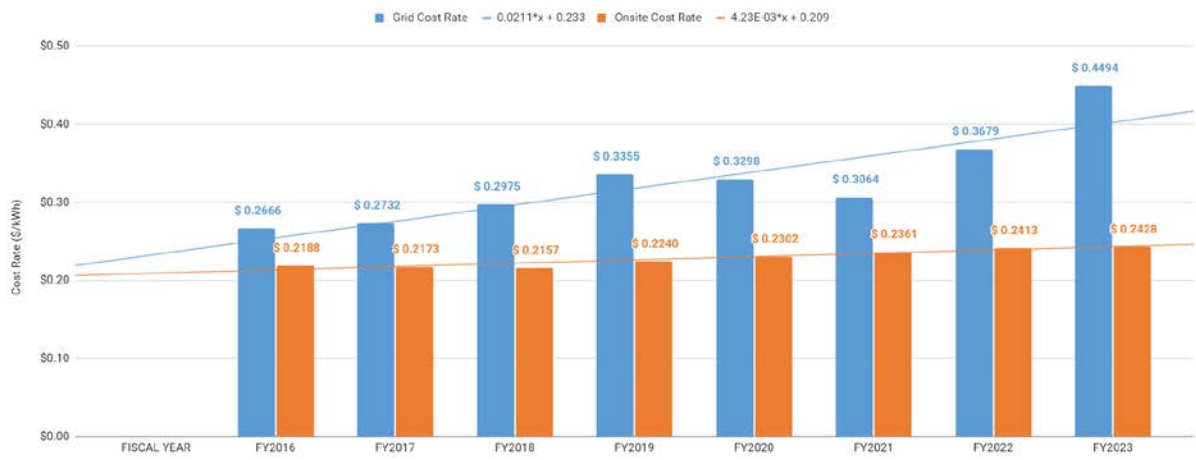
Proposed FY 2024 PV Solar Addition				
School	Annual kWh (Capacity)	Annual kWh (Guaranteed)	Rate	Escalation
Campbell HS	406,250	320,770	\$0.2726	1%
Ewa Makai MS	410,592	349,003	\$0.2726	1%
Holomua ES	327,600	278,460	\$0.2726	1%
Kahuku HS&IS	367,000	234,500	\$0.2726	1%
Kaimuki HS	597,000	488,800	\$0.2726	1%
Kapolei MS	645,500	473,000	\$0.2726	1%
Mckinley HS	181,300	163,900	\$0.2410	1%
Mililani MS	457,647	389,000	\$0.2726	1%
Moanalua HS	583,529	496,000	\$0.2726	1%
Radford HS	280,751	238,638	\$0.2726	1%
Waianae HS	314,706	267,500	\$0.2726	1%
	4,571,875	3,699,571	\$0.2712	1%

Although this is 12% higher than previous PV solar installed at Hawaii schools, it is still at a discount from even the lowest expected cost of utility electricity.

On a historical basis, although the consumption of utility electricity has declined by 4.6 million kWh per year since FY 2016, the cost for that electricity has actually increased by \$1.1 million a year. This is because the rate paid for utility electricity has, on average, gone up faster than reduction in consumption. On average, the utility electricity rate has gone up 2.1% per year. By comparison, the solar PV electricity rate has gone up only 0.4% per year.

The reduction in utility consumption has resulted from both increasing solar PV consumption and overall electricity conservation and energy efficiency measures. Increased solar PV consumption amounted to approximately 1.8 million kWh per year and conservation and energy efficiency amounted to approximately 2.8 million kWh per year.

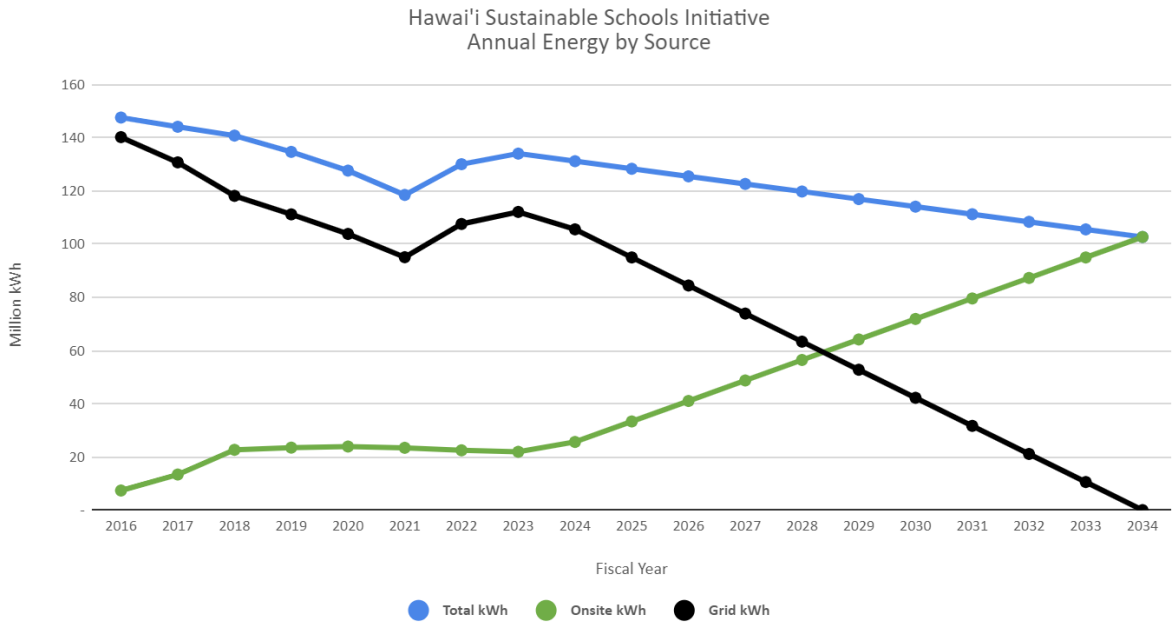
School Facilities Historical Data						
	Grid Data		Onsite Data		Total Consumption Data	
FISCAL YEAR	Grid Cost	Grid kWh	Onsite Cost	Onsite kWh	Total Cost	Total kWh
FY2016	37,391,894	140,234,958	\$1,611,222	7,364,016	\$39,003,116	147,598,974
FY2017	35,715,757	130,744,891	\$2,907,605	13,383,389	\$38,623,362	144,128,280
FY2018	35,146,479	118,154,761	\$4,887,709	22,658,876	\$40,034,187	140,813,637
FY2019	37,303,479	111,196,400	\$5,260,160	23,487,709	\$42,602,146	134,684,109
FY2020	34,243,442	103,845,177	\$5,502,586	23,903,943	\$39,723,760	127,647,855
FY2021	29,131,848	95,080,156	\$5,529,904	23,424,982	\$34,661,751	118,505,138
FY2022	39,581,971	107,580,693	\$5,423,424	22,479,425	\$45,005,388	130,060,118
FY2023	50,378,123	112,107,710	\$5,323,051	21,923,915	\$55,701,170	134,031,625
Annual Change	1,061,080	-4,634,366	\$484,892	1,787,072	\$1,545,248	-2,848,500

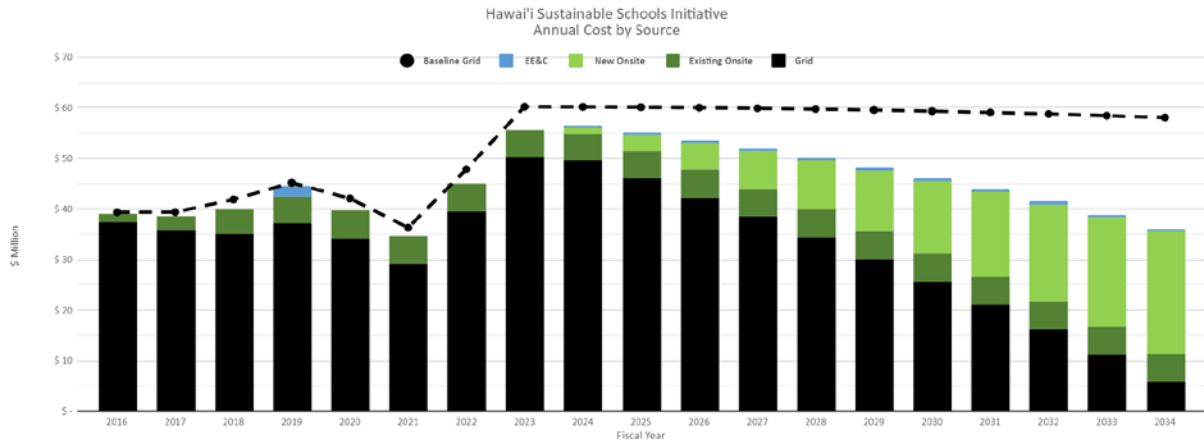


Based on this historical performance, the Department has a plan to accomplish the remaining 11 years of the Sustainable Schools Initiative. The current annual utility consumption level is 112.1 million kWh and the expectation is that over the next 10 years, conservation and energy efficiency will reduce that utility consumption to 80.8 million kWh. In FY 2024, 3.7 million kWh of solar PV will be added to Hawaii schools, reducing utility consumption to 77.1 million kWh. As such, in order to achieve net zero consumption, 7.71 million kWh of solar PV need to be added annually to Hawaii schools during FY 2025-2034.

Sustainable Schools Initiative Facilities Plan (FY 2024 - 2034)				
	Energy Efficiency & Conservation		Renewable Energy	
Plan FY	EE&C kWh	EE&C \$	RE kWh	RE \$
2023				
2024	2,848,500	\$ 569,700	3,699,571	\$ 1,003,324
2025	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2026	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2027	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2028	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2029	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2030	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2031	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2032	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2033	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2034	2,848,500	\$ 569,700	7,707,464	\$ 2,090,265
2035				
2025-2034 Target			77,074,639	
2024-2034 Total	31,333,500	\$ 6,266,700	80,774,210	\$ 21,905,969
Notes	1. FY2023 Utility Consumption = 112,107,710 kWh			
	2. FY2024 Contracted RE = 3,699,571			

The result of this plan is shown in the following two charts:





Note: It has been assumed that continued utility grid connection will incur a minimum bill charge of 10%.

3) CHALLENGES OR BARRIERS ENCOUNTERED OR ANTICIPATED IN MEETING THE NET-ZERO ENERGY GOAL SET FORTH IN SECTION 302A-1510(a), HRS:

Many variables were used in developing the plan in Part 2. The estimates for these variables were mostly derived from historical data. However, historical data cannot predict the future, and so variability can be expected.

Although the cost of alternative energy technology has increased dramatically in the recent past, electric utility rates have also risen. Volatility in both of these factors make it difficult to evaluate the specific economics of net-zero energy.

Past experience with solar energy has demonstrated that higher solar fractions can help to lower the average electric rates in high utility rate regions, such as the neighbor islands, and provide a less volatile rate environment.

There are several challenges in executing a solar PV capital addition program over the duration of a decade.

1. Over 80% of the total solar PV equipment installed will occur over the next decade.
2. In this plan, the engineering estimates of the scale of future energy efficiency and conservation measure impacts and costs are uncertain because the decision to implement these measures will depend on the cost of electricity at that future time.
 - a. The cost of electricity depends not only on oil prices but dramatically changing electricity generation mixes at Hawaiian Electric Company (HECO) and Kauai Island Utility Cooperative (KIUC) as they act to achieve their own net zero mandates.
 - b. On top of these considerations are plans at HECO to implement a time-of-use tariff structure that will also complicate these decisions by promoting energy storage as a complementary technology with uncertain future costs and capabilities.
3. The potential savings and cost of conservation and energy efficiency measures has not

been evaluated. But, history has proven them to be more cost-effective than alternative energy measures.

4. Energy consumption growth may be significant due to:
 - a. Increasing air conditioning and electric vehicle charging;
 - b. Student population growth; and
 - c. Climate change.
5. The cost of future solar PV equipment may increase significantly because of supply chain issues.
6. The productivity of solar PV equipment will decline due to aging.
7. The total cost of solar energy will be higher when disposal costs are factored in.

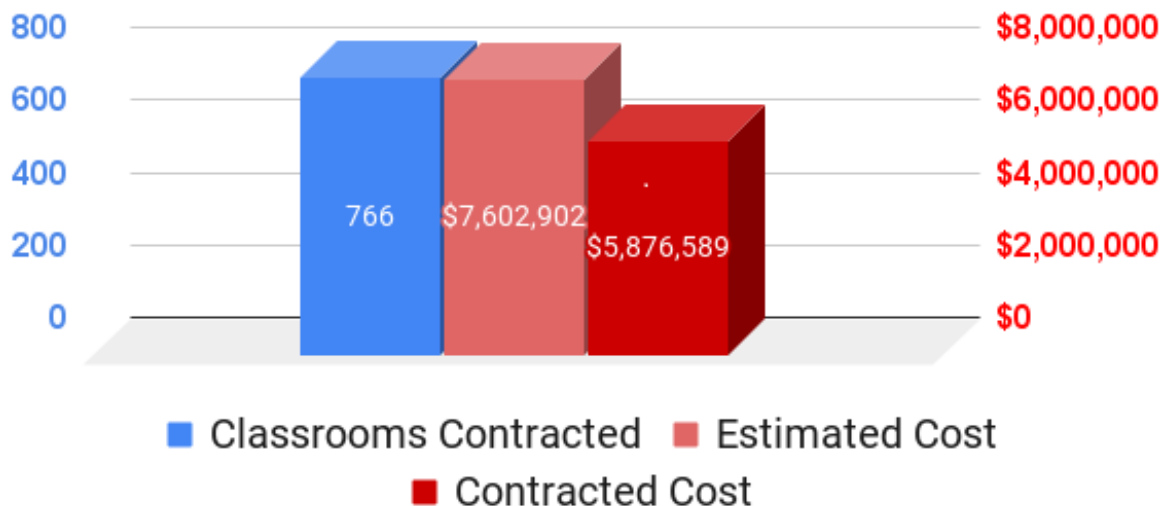
4) IMPLEMENTATION OF MEASURES TO COOL PUBLIC SCHOOL CLASSROOMS SET FORTH IN SECTION 302A-1510(e), HRS:

School Directed Air Conditioning Program (SDAC) Update

The first phase of the SDAC installed approximately 4,000 window air conditioning units in approximately 2,000 classrooms. In the most recent phase, for fiscal year 2022-2023, 766 classrooms were renovated at an overall cost of \$5,876,589. This represents an estimated average cost of \$7,672 per classroom.

SDAC FY 2022-2023

Impacts vs Costs



The final breakdown of the installation data is:

School	Schools	Classrooms	Contracted Estimated Cost	Contracted Cost	Contracted Cost Per Classroom
Aiea Elementary	1	2	\$30,000	\$25,600	\$12,800
Ala Wai Elementary	1	1	\$200,000	\$262,745	\$262,745
Dole Middle	1	16	\$422,709	\$422,709	\$26,419
Enchanted Lake Elementary	1	24	\$200,000	\$49,160	\$2,048
Haaheo Elementary	1	13	\$200,000	\$189,974	\$14,613
Hilo High	1	9	\$75,000	\$73,999	\$8,222
Hilo Intermediate	1	17	\$250,000	\$33,939	\$1,996
Hokulani Elementary	1	19	\$200,000	\$96,791	\$5,094
Honaunau Elementary	1	1	\$5,000	\$11,067	\$11,067
Inouye Elementary	1	10	\$220,000	\$133,022	\$13,302
Kahakai Elementary	1	1	\$5,000	\$4,496	\$4,496
Kahuku Elementary	1	10	\$100,000	\$48,320	\$4,832
Kahuku High and Intermediate	1	19	\$205,000	\$127,613	\$6,716
Kailua Elementary	1	30	\$200,000	\$107,370	\$3,579
Kailua High	1	36	\$192,000	\$282,743	\$7,854
Kalaheo High	1	90	\$500,000	\$258,388	\$2,871
Kalaniana'ole Elementary and Intermediate	1	1	\$50,000	\$13,896	\$13,896
Kaleiopuu Elementary	1	29	\$320,000	\$52,275	\$1,803
Kaneohe Elementary	1	35	\$280,000	\$148,692	\$4,248
Kapiolani Elementary	1	27	\$250,000	\$85,315	\$3,160
King Intermediate	1	3	\$19,950	\$19,950	\$6,650
Konawaena High	1	23	\$200,000	\$183,592	\$7,982
Konawaena Middle	1	5	\$50,000	\$43,860	\$8,772
Leilehua High	1	41	\$225,000	\$246,560	\$6,014
Likelike Elementary	1	9	\$224,999	\$211,591	\$23,510
Lincoln Elementary	1	10	\$220,000	\$57,143	\$5,714
Maemae Elementary	1	31	\$346,800	\$177,289	\$5,719
McKinley High	1	5	\$150,544	\$150,544	\$30,109
Mililani Mauka Elementary	1	6	\$48,000	\$17,465	\$2,911
Naalehu Elementary	1	35	\$525,000	\$843,290	\$24,094

School	Schools	Classrooms	Contracted Estimated Cost	Contracted Cost	Contracted Cost Per Classroom
Niu Valley Middle	1	16	\$108,000	\$181,960	\$11,373
Pauoa Elementary	1	15	\$147,900	\$80,693	\$5,380
Pearl Ridge Elementary	1	8	\$60,000	\$41,000	\$5,125
Puohala Elementary	1	20	\$160,000	\$120,194	\$6,010
Roosevelt High	1	13	\$143,000	\$323,161	\$24,859
Scott Elementary	1	30	\$80,000	\$100,627	\$3,354
Sunset Beach Elementary	1	7	\$105,000	\$60,080	\$8,583
Wahiawa Elementary	1	16	\$128,000	\$127,478	\$7,967
Wahiawa Middle	1	20	\$160,000	\$149,012	\$7,451
Waialua Elementary	1	29	\$232,000	\$92,345	\$3,184
Waialua High and Intermediate	1	6	\$65,000	\$54,000	\$9,000
Waianae High	1	2	\$25,000	\$16,440	\$8,220
Waikele Elementary	1	2	\$24,000	\$10,341	\$5,171
Waipahu Intermediate	1	24	\$250,000	\$139,860	\$5,828
Grand Total	44	766	\$7,602,902	\$5,876,589	\$7,672

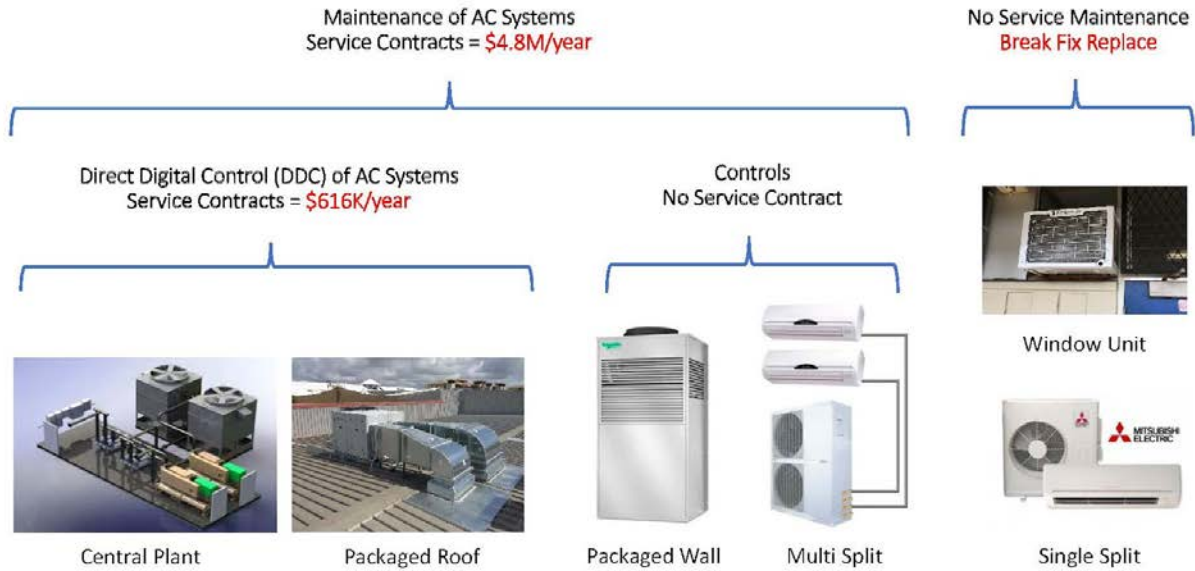
It is estimated that, based on the results of this latest phase of the SDAC, there are a remaining 2,400+ classrooms that still require air conditioning. The current estimated cost for this work is \$20,000,000.

However, it should be noted that many of these classrooms may require electrical upgrades in order to support the addition of air conditioning. The costs for these upgrades will probably be considerable and are not included in the cost estimate for the air conditioning itself.

Types of Air Conditioning Systems

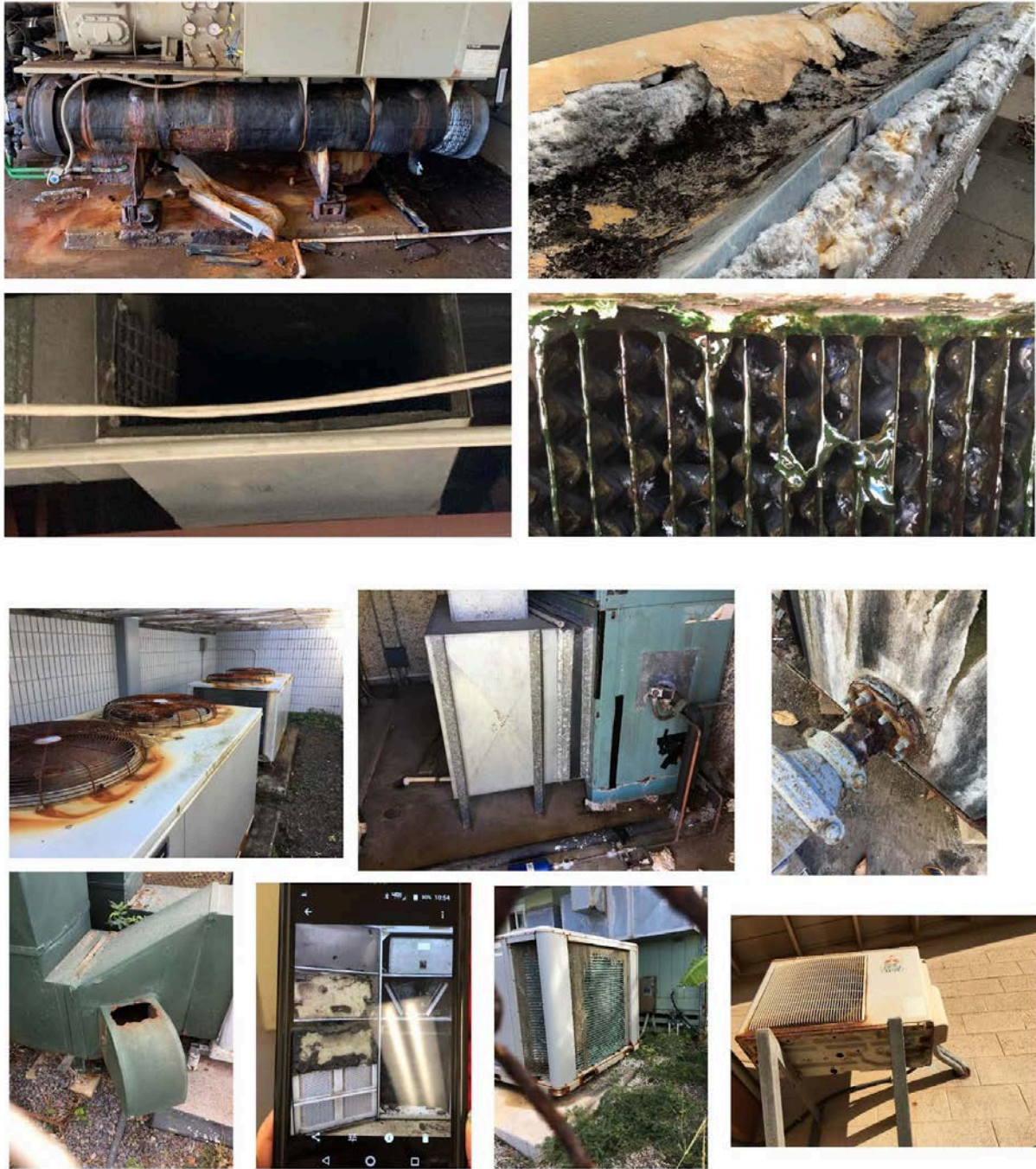
The Department has service contracts on its multi-unit air conditioning systems. For single-unit systems, there is no service contract as it is more cost-effective to replace the single unit at the end of its life.

Types of AC Systems



The following are pictures of some aging, but currently functioning air conditioning systems in use at our public schools.





New Air Conditioning Design Standards

Air Conditioning systems with superior part-load efficiency are specified to replace obsolete systems that are primarily optimized for summer peak loads. The outdated small chillers are being upgraded to a Variable Refrigerant Flow (VRF) system, and the old packaged and window ACs with single-speed compressors are being replaced with units featuring inverters. This transition is expected to result in significant energy savings, with an estimated improvement in efficiency ranging from 20% to 35%.

AC Design Standards

Sustainable Systems



Packaged Roof



Packaged Wall



Multi Split



Single Split



Window or Wall



Air/water-cooled chillers

- Complex design and installation
- Difficult to operate at low loads
- Higher utility and maintenance cost



Variable Refrigerant Flow

- Better efficiency
- Lower overall lifetime cost
- Easier to maintain and operate

The Department is set to introduce the central Building Management System (BMS) in 2024 to enhance energy and operational efficiency. Presently, a basic Monday-to-Friday weekly timer on the local thermostat panel is used in the majority of classrooms, resulting in over 30% of the air conditioning being wasted on unoccupied rooms. The central BMS, complemented by occupancy sensors, holiday and school break schedules, will enable the automatic adjustment or shutdown of AC in unoccupied areas.

New Cooling Measure

Kulanihakoi High School boasts an innovative free-cooling system designed to maximize the use of naturally cool air in the mornings and evenings. At night, classrooms are cooled with outside air to establish an ideal condition for the following day. In the early morning, when external conditions are cool and dry, air conditioning units are deactivated, and the building

control activates automatic windows, exhaust fans, and chimney vents to introduce cool outdoor air into the classrooms.



List of Completed HVAC Efficiency Improvement Projects

School Name	Project #	Description
Ahrens Elem	R61010-18	Replace existing window units with new split system units at P-1, P-1A, P-2, P-3, P-4, P-5 and P-6.
Aliiolani Elem	R61009-18	Replace existing split system units at Building A.
Baldwin High	R51202-19	Replace existing packaged units at Buildings H, R and P15.
Campbell High	R61016-18	Replace existing packaged unit at P14.
Castle High	R61000-18	Replace existing split system units at Buildings K, P16 and P17.
De Silva Elem	P11255-22	Replace PTAC unit and remove broken water heater at TB2.
Farrington High	R61013-18	Replace existing split system units and window units with new split system units at Buildings A, J, K and N.
Fern Elem	R61013-18	Replace existing split system units at Buildings B and G.
Hawaii School for the Deaf and Blind	P25254-21	Replace kitchen exhaust fan at Building H.
Heeia Elem	R61000-18	Replace existing window units at Building A with split system units.
Highlands Inter	R61017-18	Replace existing split system unit at Building K.
Hookena Elem	R17222-20	Replace existing window units with new split system units at Building A.
Iao Inter	P51206-20	Replace the existing heat pump at Building G.
Ilima Inter	R61016-18	Replace existing window units with new split system units at TB5 and TB6.
Jefferson Elem	R61009-18	Replace existing window units with new split system unit at Building Q.
Kaahumanu Elem	R61008-18	Replace existing window units with new split system units at P-1, P-2 and P-3.

School Name	Project #	Description
Kailua High	R61000-18	Replace existing window units in rooms D10 and D24B with split system units.
Kailua High	Q93237-20	Install new split system units and appurtenances at Building T.
Kaimuki High	R61015-18	Replace existing packaged unit with new split system unit at Building F.
Kaimuki Middle	R61015-18	Replace existing split system units and window units with new split system units at Building R and V.
Kaiulani Elem	R61008-18	Replace existing split system units at Buildings A, B and C.
Kalani High	R61015-18	Replace existing split system units and window units with new split system units at Buildings H and J.
Kalihi Elem	R61014-18	Replace existing split system units at Building B.
Kalihi Kai Elem	R61014-18	Replace existing split system units and window units with new split system units at Buildings B, F, G and J.
Kalihi Uka Elem	R61014-18	Replace existing split system units at Building B.
Kapalama Elem	R61013-18	Replace existing split system units at Buildings C and F.
Kapolei Elem	R82216-20	Replace existing window units at TB-1, TB-2, TB-3, TB-4, TB-5, TB-6, TB-7, TB-8, TB-9, TB-10, TB-11, TB-12 and TB-15.
Kau High & Pahala Elem	Q13245-20	Replace existing chill box, freezer, blowers and compressors at Building C.
Kauluwela Elem	R61011-18	Replace existing split system units at Building D.
Kawananakoa Middle	R61001-18	Replace existing split system units at Building A.
Keaau High	P14208-22	Replace existing water heaters and appurtenances at Building C.
Keaau Middle	P14209-22	Replace existing water heater in Cafeteria.
Keaukaha Elem	R11208-19	Replace existing packaged unit, split system units, window unit and appurtenances at Buildings A, B, C, D, E, G, P1, P2, P5 and TB1.
Keoneula Elem	R61016-18	Replace existing split system unit and window unit with new split system units at Buildings B and C.
Kihei Elem	R55201-20	Replace existing split system units and window unit at Buildings A, B, D, L and P-23.
Kohala Elem	-	Replace existing split system units.
Konawaena High	R17207-19	Replace existing packaged unit at Building U.
Konawaena Middle	R17224-20	Replace existing split system units, outside air fan and appurtenances at Building F.
Lanakila Elem	R61011-18	Replace existing split system unit at Building L.
Lehua Elem	R61017-18	Replace existing split system units at Buildings C and D.
Likelike Elem	R61011-18	Replace existing split system units at Building L.
Maemae Elem	R61001-18	Replace existing split system unit at Building A.
Makakilo Elem	R82217-20	Replace existing split system units at Building H.

School Name	Project #	Description
McKinley High	R61008-18	Replace existing split system units and window units at Building M and P10.
Nanakuli Elem	R61010-18	Replace existing split system units at Building E.
Niu Valley Middle	R61015-18	Replace existing window units at Building L.
Noelani Elem	R61001-18	Replace existing window units at Buildings D and E with split system units.
Pearl City High	P84254-21	Replace existing packaged unit and appurtenances at Building J.
Pearl Harbor Kai Elem	R61012-18	Replace existing split system unit at Building D.
Pohakea Elem	R61016-18	Replace existing split system units at Building F.
Pomaikai Elem	P55278-21	Replace existing fire sprinkler risers at Buildings B, D and E.
Roosevelt High	R61001-18	Replace existing window unit at Building A with split system units.
Royal Elem	R61011-18	Replace existing split system units at Building A.
Salt Lake Elem	R61012-18	Replace existing split system units and outdoor air units at Building E.
Shafter Elem	R61012-18	Replace existing split system units at Building D.
Waihole Elem	R61000-18	Replace existing split system unit at Building D.
Waiakea High	R19202-19	Replace existing packaged unit and split system units at Buildings A and M.
Waialae Elem PCS	P25216-22	Replace existing sewer and vent piping at Building D Kitchen.
Waialua Elem	R76221-20	Replace existing window units at Building B with split system units.
Waianae High	R61010-18	Replace existing window unit with new split system unit at Building H. Replace existing rooftop packaged units at Building Q.
Waianae Inter	R61010-18	Replace existing window units with new split system units at Building C and P8.
Waihee Elem	R51200-20	Replace existing split system units at Building B.
Waimalu Elem	R61012-18	Replace existing split system unit at Building E.
Waipahu Elem	R61010-18	Replace existing window unit with new split system unit at Pre-Plus portable.
Waipahu Inter	R61010-18	Replace existing window units with new split system units at Building L and P-6.
Royal Elem	R61011-18	Replace existing split system units at Building A.
Salt Lake Elem	R61012-18	Replace existing split system units and outdoor air units at Building E.
Shafter Elem	R61012-18	Replace existing split system units at Building D.
Waihole Elem	R61000-18	Replace existing split system unit at Building D.
Waiakea High	R19202-19	Replace existing packaged unit and split system units at Buildings A and M.

School Name	Project #	Description
Waialae Elem PCS	P25216-22	Replace existing sewer and vent piping at Building D Kitchen.
Waialua Elem	R76221-20	Replace existing window units at Building B with split system units.
Waianae High	R61010-18	Replace existing window unit with new split system unit at Building H. Replace existing rooftop packaged units at Building Q.
Waianae Inter	R61010-18	Replace existing window units with new split system units at Building C and P8.
Waihee Elem	R51200-20	Replace existing split system units at Building B.
Waimalu Elem	R61012-18	Replace existing split system unit at Building E.
Waipahu Elem	R61010-18	Replace existing window unit with new split system unit at Pre-Plus portable.
Waipahu Inter	R61010-18	Replace existing window units with new split system units at Building L and P-6.

Air Conditioning Data Collection

The Department is facing some difficulties in acquiring up-to-date data on the existing equipment installed in classrooms. There are over 10,300 classrooms in Hawaii's 258 public schools. An average of 40 classrooms per school would take over 10 person-hours to conduct just a 15-minute inspection of each room. To conduct such inspections regularly would require additional personnel.

The table below provides a list of the scope of facilities at each Department school:

School Name	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Ahuimanu El Total	18	368	15,586
Aiea El Total	21	420	18,762
Aiea High Total	67	1,802	75,676
Aiea Intermediate Total	43	1,111	42,187
Aikahi El Total	24	498	23,380
Aina Haina El Total	31	735	26,489
Ala Wai El Total	30	631	25,149
Aliamanu El Total	42	877	35,640
Aliamanu Middle Total	49	1,222	47,942
Aliiolani El Total	22	417	20,785
Alvah Scott El Total	28	620	23,541
Anuenue El Total	27	601	23,286
August Ahrens El Total	70	1,521	61,169

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Baldwin High Total	91	2,213	87,783
Barbers Point El Total	33	693	36,816
Campbell High Total	143	3,654	156,828
Castle High Total	103	2,653	118,132
Chiefess Kamakahelei Middle Total	64	1,674	67,103
de Silva El Total	21	449	17,712
Dole Middle Total	51	1,317	54,469
Eleele El Total	22	472	18,621
Enchanted Lake El Total	24	524	23,326
Ewa Beach El Total	38	797	36,141
Ewa El Total	46	987	43,609
Ewa Makai Middle Total	48	1,223	55,385
Farrington High Total	129	3,348	139,941
Fern El Total	25	562	23,196
Haaheo El Total	8	172	5,609
Hahaione El Total	28	587	24,430
Haiku El Total	20	384	14,978
Hale Kula El Total	42	857	29,252
Haleiwa El Total	26	472	22,467
Hana High & El Total	31	730	37,064
Hanalei El Total	14	315	12,229
Hauula El Total	15	325	12,900
Hawaii School for the Deaf and Blind Total	18	428	10,545
Heeia El Total	37	755	34,116
Helemano El Total	31	622	26,234
Hickam El Total	29	601	25,093
Highlands Int Total	57	1,446	64,940
Hilo High Total	82	2,013	80,440
Hilo Int Total	36	989	45,046
Hilo Union El Total	26	564	20,338
Ho'okele El Total	45	900	46,031

Hokulani EI Total	19	419	17,466
Holomua EI Total	51	1,054	42,618
Holualoa EI Total	28	575	19,448

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Honaunau EI Total	14	276	11,788
Honokaa EI Total	17	364	15,968
Honokaa High & Int Total	54	1,509	52,164
Honowai EI Total	35	771	31,463
Hookena EI Total	17	308	14,568
Iao Int Total	50	1,292	40,615
Iliahi EI Total	23	465	21,439
Ilima Int Total	56	1,397	60,802
Iroquois Point EI Total	36	805	31,366
Jarrett Middle Total	31	746	32,222
Jefferson EI Total	20	382	21,531
Ka'a'awa EI Total	8	172	7,137
Kaahumanu EI Total	29	629	25,318
Kaala EI Total	25	539	21,590
Kaelepulu EI Total	7	160	11,782
Kaewai EI Total	21	433	18,232
Kahakai EI Total	35	759	30,870
Kahala EI Total	27	550	23,480
Kahalu'u EI Total	17	349	15,148
Kahuku EI Total	22	492	18,495
Kahuku High & Int Total	97	2,473	104,955
Kahului EI Total	45	955	36,523
Kailua EI Total	27	524	24,760
Kailua High Total	70	1,847	90,513
Kailua Int Total	56	1,436	62,416
Kaimiloa EI Total	32	689	27,716
Kaimuki High Total	78	2,029	78,921
Kaimuki Middle Total	56	1,512	60,921

Kainalu El Total	29	626	24,714
Kaiser High Total	64	1,668	84,900
Kaiulani El Total	24	511	22,084
Kalaheo El Total	32	646	22,005
Kalaheo High Total	63	1,663	85,235

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Kalakaua Middle Total	53	1,354	55,785
Kalama Int Total	57	1,396	52,980
Kalani High Total	63	1,691	76,072
Kalaniana'ole El & Int Total	25	579	21,125
Kaleiopuu El Total	49	1,059	44,511
Kalihi El Total	30	711	27,737
Kalihi Kai El Total	35	784	33,887
Kalihi Uka El Total	17	362	16,240
Kalihi Waena El Total	29	580	26,428
Kamali'i El Total	37	812	32,815
Kamehameha III El Total	39	820	30,675
Kamiloiki El Total	23	473	25,308
Kaneohe El Total	29	619	26,552
Kanoelani El Total	37	743	33,512
Kapa'a El Total	52	1,143	44,954
Kapa'a High Total	66	1,791	75,689
Kapa'a Middle Total	47	1,169	46,350
Kapalama El Total	31	666	25,801
Kapiolani El Total	23	507	22,157
Kapolei El Total	46	964	38,828
Kapolei High Total	174	4,495	151,759
Kapolei Middle Total	73	1,744	73,616
Kapunahala El Total	30	628	27,228
Kau High & Pahala El Total	39	998	43,927
Kauai High Total	87	2,254	71,405
Kauluwela El Total	17	354	14,079

Kaumana El Total	15	324	12,017
Kaumualii El Total	33	690	30,027
Kaunakakai El Total	17	364	13,852
Kawananakoa Middle Total	50	1,315	49,194
Ke Kula o Ehunuikaimalino Total	14	300	9,777
Kea'au El Total	41	891	34,283
Kea'au High Total	81	2,157	75,549

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Keaau Middle Total	46	1,204	55,376
Kealakehe El Total	55	988	47,121
Kealakehe High Total	80	2,104	101,756
Kealakehe Int Total	58	1,519	59,300
Keaukaha El Total	23	452	17,987
Ke'elikolani Middle Total	35	920	30,381
Kekaha El Total	18	382	15,417
Kekaulike High Total	81	1,999	92,354
Keolu El Total	10	217	8,484
Keone'ula El Total	48	1,061	41,724
Keonepoko El Total	36	696	32,170
Kiheii El Total	65	1,371	57,081
Kilauea El Total	19	414	15,007
Kilohana El Total	8	185	7,082
King Int Total	55	1,384	78,149
Kipapa El Total	41	869	36,222
Kohala El Total	21	443	20,250
Kohala High Total	32	810	36,176
Kohala Middle Total	15	362	9,770
Koko Head El Total	22	448	21,046
Koloa El Total	20	432	17,130
Konawaena El Total	30	620	26,698
Konawaena High Total	62	1,615	74,931
Konawaena Middle Total	34	785	29,059

Kuhio El Total	18	379	15,772
Kula El Total	27	556	24,013
Lahaina Int Total	40	1,001	37,871
Lahainaluna High Total	57	1,551	62,758
Laie El Total	42	915	39,524
Lanai High & El Total	41	1,012	60,598
Lanakila El Total	22	451	19,496
Lehua El Total	23	460	21,479
Leihoku El Total	45	1,020	39,868

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Leilehua High Total	109	2,820	121,610
Lihikai El Total	52	1,081	44,647
Liholiho El Total	22	424	18,515
Likelike El Total	23	491	21,410
Linapuni El Total	12	240	11,624
Lincoln El Total	27	484	24,500
Lokelani Int Total	39	1,017	38,156
Lunalilo El Total	25	521	22,771
Ma'ema'e El Total	28	612	24,906
Maili El Total	48	944	39,613
Makaha El Total	34	655	31,296
Makakilo El Total	24	535	19,996
Makalapa El Total	33	639	29,882
Makawao El Total	35	698	24,278
Manana El Total	22	484	18,868
Manoa El Total	28	578	24,293
Maui High Total	106	2,751	103,297
Maui Waena Int Total	52	1,297	50,693
Mauka Lani El Total	33	706	27,503
Maunaloa El Total	8	172	4,534
Maunawili El Total	19	417	16,708
McKinley High Total	115	3,026	107,221

McKinley High - MCSA McKinley Community School Total	28	700	15,285
Mililani High Total	125	3,157	140,859
Mililani Ike El Total	47	990	36,638
Mililani Mauka El Total	48	975	39,331
Mililani Middle Total	80	2,038	79,157
Mililani Uka El Total	34	706	29,529
Mililani Waena El Total	38	793	34,611
Moanalua El Total	32	714	27,744
Moanalua High Total	100	2,673	126,387
Moanalua Middle Total	44	1,155	39,249

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Mokapu El Total	37	799	29,690
Mokulele El Total	27	569	23,064
Molokai High Total	42	1,059	44,373
Molokai Middle Total	14	350	13,862
Momilani El Total	17	365	13,891
Mountain View El Total	27	597	22,270
Na'alehu El Total	27	563	19,164
Nanaikapono El Total	54	1,109	39,512
Nanakuli El Total	26	507	26,664
Nanakuli High & Int Total	79	2,131	94,882
Nimitz El Total	34	705	26,777
Niu Valley Middle Total	38	979	40,769
Noelani El Total	21	457	18,701
Nuuanu El Total	16	355	14,063
Olomana Int & High - OYC Only Total	15	382	9,226
Pa'auilo El & Int Total	17	411	15,486
Pahoa El Total	25	526	21,945
Pahoa High & Int Total	55	1,429	66,665
Paia El Total	21	404	13,783
Palisades El Total	23	478	20,804

Palolo El Total	16	329	14,477
Parker El Total	23	420	21,833
Pauoa El Total	17	362	15,689
Pearl City El Total	28	572	23,992
Pearl City High Total	115	2,992	146,098
Pearl City Highlands El Total	25	518	26,078
Pearl Harbor El Total	38	795	29,716
Pearl Harbor Kai El Total	27	605	23,549
Pearl Ridge El Total	27	595	23,729
Pohakea El Total	29	574	26,668
Pomaikai El Total	39	762	32,564
Pope El Total	20	429	19,016
Princess Nahienaena El Total	37	796	32,392
Pu'ohala El Total	21	449	19,289

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Pu'u Kukui El Total	33	685	30,534
Pu'uhale El Total	18	232	16,054
Pukalani El Total	22	453	19,775
Radford High Total	77	1,953	96,986
Red Hill El Total	29	605	23,729
Roosevelt High Total	80	2,105	82,448
Royal El Total	16	347	13,823
Salt Lake El Total	40	778	34,072
Shafter El Total	18	395	16,451
Solomon El Total	50	1,045	48,686
Stevenson Middle Total	47	1,191	40,938
Sunset Beach El Total	23	497	19,319
Wahiawa El Total	28	590	23,770
Wahiawa Middle Total	58	1,473	60,734
Waiahole El Total	12	208	12,069
Waiakea El Total	42	906	39,644
Waiakea High Total	96	2,492	131,901

Waiakea Int Total	53	1,348	55,853
Waiakeawaena El Total	34	809	29,463
Waialua El Total	32	665	28,142
Waialua High & Int Total	60	1,572	67,035
Waianae El Total	42	923	34,946
Waianae High Total	109	2,801	133,529
Waianae Int Total	55	1,352	57,755
Waiau El Total	26	547	28,634
Waihee El Total	39	842	35,321
Waikele El Total	32	670	26,424
Waikiki El Total	24	522	21,761
Waikoloa El & Middle Total	42	928	35,352
Wailuku El Total	41	823	35,296
Waimalu El Total	30	623	26,325
Waimanalo El & Int Total	38	844	35,042
Waimea Canyon Middle Total	39	959	36,744

<i>School Name</i>	Classroom Count	HIDOE Design Enrollment	Sq Ft. Area
Waimea El Total	30	584	26,598
Waimea High Total	46	1,242	55,399
Waipahu El Total	54	1,231	47,962
Waipahu High Total	125	3,209	145,569
Waipahu Int Total	70	1,750	73,815
Washington Middle Total	58	1,505	52,376
Webling El Total	26	564	23,057
Wheeler El Total	42	832	38,665
Wheeler Middle Total	49	1,281	46,487
Wilcox El Total	48	999	48,259
Wilson El Total	29	595	25,583
Grand Total	10,367	242,777	10,165,825

Proposed Legislation

The Department does not have any sustainable schools proposed legislation for this upcoming legislative session.