



STATE OF HAWAII
DEPARTMENT OF EDUCATION

P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF THE SUPERINTENDENT

September 1, 2015

TO: The Honorable Lance Mizumoto
Chairperson, Board of Education

FROM: 
Kathryn S. Matayoshi
Superintendent

SUBJECT: **Presentation on Department of Education's Heat Abatement Program:
Process, Funding, Efforts, Maintenance, Utilities, Current Status, and the
Way-Ahead**

1 DESCRIPTION

The Office of School Facilities and Support Services will present an update on the Department of Education's (Department) efforts on heat abatement. The presentation will look at how we have prioritized in the past, recent projects, current priorities, concerns about life cycle costs, and a way ahead.

2 UPDATE OR PRESENTATION

The recent abnormally hot weather conditions have resulted in a large public outcry about the temperatures in our classrooms. The Department acknowledges the hot conditions and will present a description of what has been done and our plan to lower the temperatures in our classrooms.

KSM:kb
Attachment

c: Office of School Facilities and Support Services

HAWAII DEPARTMENT OF EDUCATION HEAT ABATEMENT UPDATES

HISTORICAL APPROACH TO HEAT ABATEMENT

The Department of Education (DOE) has a heat abatement list which uses scientifically gathered campus temperatures to determine a prioritized list of campuses statewide. Noise, dust, or pollution are other factors that at times dictate the need for air conditioning (AC) in a school. Every year DOE makes a request for funding through the budget process. Based on the appropriation, DOE develops a plan on how to abate heat at the next prioritized school on the list. Funding for heat abatement is included as part of the CIP Key Performance Indicator (KPI) of "Equity." In Fiscal Year 2015 (FY15), the DOE requested \$90 million in the Equity KPI and was appropriated \$15 million. That \$15 million must be split between other competing programs within the Equity KPI, such as special education and science facility upgrades.

Additionally, the legislature provides line-item funding for specific projects. From 2011 to 2015, DOE has completed or is currently working on 92 line-item requests to install new AC systems in existing buildings, or to replace aging AC systems. The total estimated cost for these projects is \$31.2 million.

RECENT WHOLE-SCHOOL AC PROJECTS:

- Maili EI – completed in 2002
- Kihei EI – completed in 2007
- Kamehameha III EI – completed in 2010
- Pohakea EI – completed in 2012
- Hickam EI – completed in 2014

AC PRIORITY LIST:

- Lokelani Int – phase I completed in 2010, phase II in progress with expected completion in 2015
 - Ewa Beach EI
 - Ilima Int
 - Campbell High*
 - Aikahi EI
 - Kamaile EI
 - Kaimiloa EI
 - Nimitz EI
 - Mokulele EI
 - Pearl Harbor-Kai EI
 - Lehua EI
 - Waimalu EI
 - Aliamanu EI
 - Aliamanu Mid
 - Waipahu High
 - Ewa EI
 - Barbers Point EI
 - Waipahu Int
 - Pearl Harbor EI
 - August Ahrens EI

***Campbell High:** In October 2013, Campbell High opened a new two-story, 10-classroom building that was fully air-conditioned. Of the 138 classrooms at Campbell High, 40 classrooms have AC. By January 2016, the campus will receive 8 portables (15 classrooms), all with AC.

SCHOOLS WITH CENTRAL AC THROUGHOUT CAMPUS:

Ewa Makai Mid	Hickam El
Iroquois Pt. El	Holomua El
Hookele El	Kamalii El
Kamehameha III El	Kapolei El
Kapolei High	Kapolei Mid
Keaau El	Keoneula El
Kihei El	Lokelani Int (to be completed 2015)
Maili El	Mililani Ike El
Mililani Mid	Mililani Mauka El
Pohakea El	Pomakai El
Puu Kukui El	

PERCENTAGE OF AC CLASSROOMS

Many schools have AC in some of their classrooms or buildings. An ongoing survey showed that in 55 schools reporting results so far, 1,216 classrooms (or 43% of 2,800) have AC. After subtracting out the schools that already have campus-wide AC, 395 classrooms (or 20% out of 1,967) have AC. (See Attachment A).

Although most schools do not have campus-wide AC, DOE can air-condition individual buildings - currently there are 17 of these projects under way.

COST ESTIMATES

One of the most important factors in installing AC systems is the cost - not just the initial capital investment, but also ongoing costs such as electricity, maintenance, and replacement.

ESTIMATED COST TO INSTALL AC:

DOE uses both the estimated and actual cost (where available) of recent projects, adjusts for inflation and school size to estimate the cost of installing AC and related infrastructure improvements at schools that are on the priority list for campus-wide AC. Estimates include infrastructure improvements, design, construction, and AC system costs.

For example, the cost of AC and related infrastructure upgrades at Pohakea Elementary was \$4.3 million when bids opened for the project in 2010. That equals about \$110,000/classroom. Pohakea Elementary is one of our smaller elementary schools with an enrollment of 573 students in 2014. Based on this actual bid result, accounting for inflation since 2010, and adjusting for the various school sizes, we have estimated that the cost to AC the average elementary school is \$5 million.

The cost estimates for both middle and high schools were calculated in a similar fashion across the number and type of schools that need cooling.

- 153 elementary schools X \$5 million = \$765 million
- 33 middle schools X \$10 million = \$330 million
- 40 high schools X \$15 million = \$600 million

Total = \$1.695 billion

(Note: Combination elementary/intermediate schools were classified as middle schools; combination elementary/high schools were classified as high schools. A cost estimate for Campbell High from 2010 came in at over \$13 million.)

The majority of Hawaii's public schools are more than 50 years old. As a result, many buildings do not have adequate electrical capacity to accommodate the increased use of technology, and other high demand infrastructure such as AC. DOE tackles a number of projects every year to upgrade the electrical supply and infrastructure at various schools.

In addition, our older schools buildings were not designed to be airtight. This stems from the fact that it was important for air to move through the buildings in a naturally ventilated environment. However, for an AC system to function effectively and efficiently, the building envelope needs to be sealed, requiring replacement of windows (typically jalousies) and doors, among other things.

COST TO OPERATE AC SYSTEMS:

After the units are installed, there is an added cost that is required in the operating budget to cover the increased electricity bill. When AC was installed at Pohakea Elementary, *the power bill more than doubled.*

DOE estimates it will pay an electricity bill of \$47.6 million this year. This level is expected even though DOE continues to pursue increased use of alternative energy sources through PV implementation. Adding a substantial AC load will mean a significant increase to the operating budget. An analysis of schools with campus-wide AC compared with schools of similar size and relative location that do not have campus-wide AC indicates that the cost of electricity may increase by more than 80% in an air conditioned school. (See Attachment B).

MAINTENANCE AND REPLACEMENT COSTS

Repair, maintenance, and eventual replacement costs must also be factored into the lifecycle of AC systems. In 2014, DOE repair costs for installed AC projects were \$1.6 million and maintenance costs (through contracts) were more than \$4.3 million. For FY16, DOE's AC repair and maintenance budget was significantly underfunded; other general funds are being used to cover this expense.

HEAT ABATEMENT ALTERNATIVES

Faced with the challenges of increased need of AC systems and the need to prioritize funding, DOE has looked at other, more sustainable options in its efforts to improve classroom comfort. In 2012, DOE engaged with the Hawaii Natural Energy Institute at the University of Hawaii (HNEI) to conduct a study of heat abatement options. HNEI contracted with MKThink, a consulting firm out of San Francisco, to design a scientific study to determine the best options to consider when dealing with Hawaii's tropical climate to improve thermal comfort in our classrooms. The study included schools in the Campbell Complex (Campbell High, Ilima Intermediate, Pohakea Elementary, and Kaimiloa Elementary), and was completed in March 2015.

During the study, DOE was appropriated the first \$2.3 million out of \$8.3 million in funding to implement heat abatement measures at the Campbell Complex. These efforts are being initiated at this time and involve solutions identified in the study. Options include passive cooling, which prevents heat from entering a building, and night thermal flushing to get rid of stored heat in a classroom overnight. Even in situations where supplemental mechanical cooling is necessary, the use of these concepts can enable AC systems to run more efficiently.

DOE has also been piloting new technologies that could reduce cost and be more sustainable. One of the most promising is photovoltaic AC (PV/AC). A portable classroom at Waianae High is into its second year of running a pilot system using three PV panels for each AC unit. However, there are limitations to how widespread PV/AC may be deployed as it

may not be a good fit for many multi-story buildings, and funds will need to be prioritized to lease/purchase and install the PV/AC units. DOE's Office of School Facilities and Support Services (OSFSS) is analyzing where it makes the most sense to add this type of AC technology to schools.

CEILING FANS

While ceiling fans do not affect the actual air temperature, air movement is one of the most effective ways to improve thermal comfort, similar to how a breeze can cool a space or person.

In 2011-12, OSFSS began a program to support the schools in the Leeward and Kau-Keaau-Pahoa districts by eliminating repair and maintenance backlogs. Facilities included ceiling fans into these projects provided that the rooms (1) were not already air conditioned; (2) did not already have ceiling fans; (3) were used for student instruction. As a result, DOE added ceiling fans to:

Leeward District

Nanakuli EI - 8 Classrooms (CR)
Nanakuli High & Int - 41 CR
Waianae EI - 2 CR
Waianae Int - 42 CR
Waianae High - 57 CR
Makaha EI - 43 CR
Leihoku EI - 5 CR
Kamaile Charter - 29 CR

Big Island

Kau High & Pahala EI - 7 CR
Keonepoko EI - 20 CR
Pahoa EI - 37 CR
Keaau Mid - 16 CR
Pahoa High & Int - 59 CR
Mt. View EI - 14 CR
Naalehu EI - 21 CR

The installation of ceiling fans is an ongoing process as schools can request the installation of ceiling fans through the Repair and Maintenance program.

SOLAR-POWERED VENTILATORS

These are vents that enable hot air to be removed from classrooms allowing cooler air to come in. Since hot air rises, most of these are installed either on roofs or high up on walls or windows. These are powered by the sun and do not need electricity. The ventilators have been installed at the following:

- Hokulani EI
- Jarrett Mid
- Kailua Int (kitchen)
- Kaiulani EI (kitchen)
- Kalani High
- Kamiloiki EI (solar wall vents)
- Kuhio EI
- Lunalilo EI (solar wall vents)
- Molokai High
- Noelani EI
- Niu Valley Mid (shop building)
- Washington Mid

COMMUNITY DONATIONS

DOE is always willing to accept donations and a detailed guide on "How to Donate" can be found on the DOE heat abatement webpage. It is recommended that the donator contact the school that they want to help directly. The principal can coordinate and ensure that the school submits the required Form 6700.

THE WAY AHEAD

With the completion of the Heat Abatement Study and its findings and recommendations, and with existing funding, DOE is moving forward in a coordinated way, ensuring that our deployments are effective and sustainable.

IMMEDIATE

Immediate efforts include passive cooling methods such as roof improvements to increase the roof's ability to reflect and prevent heat from entering the building and ceiling fans to provide air movement. Nighttime thermal flushing is another very effective way to 'shed' heat absorbed during the day to allow classrooms to start the day cooler. Currently, Campbell High, Ilima Intermediate and Kaimiloa Elementary are already part of the pilot in testing the thermal flushing technology. In addition, we will prioritize funds to include Kamaile Charter and Nimitz Elementary starting this year.

MEDIUM TERM

Upgrading electrical systems and building envelope improvements designed to maximize cooling effectiveness. Where necessary, DOE will pursue the installation of mechanical cooling to supplement immediate efforts where they fall short. In terms of funding to address heat abatement, DOE will include a clearly identified priority list to outline the plan and needs to the Board of Education, Governor and Legislature through the Supplemental Budget process.

LONG TERM

DOE will continue to consider new efficiency technologies as they are tested and proven to be a good fit — when designing new facilities or renovating existing ones.

What must also be considered in planning for these future projects is increasing temperatures, as reflected in the record-breaking year Hawaii and the world is seeing this year.

PERCENTAGE OF CLASSROOMS WITH AIR CONDITIONING

August 20, 2015

School Name	No. of Classrooms	Total Classrms with A/C	% of Classrooms with A/C
BALDWIN HIGH	105	23	22%
BLANCHE POPE ELEM	27	1	4%
ENCHANTED LAKE ELEM	40	4	10%
EWA ELEM	48	26	54%
EWA MAKAI MIDDLE	50	46	92%
HAHAIONE ELEM	33	1	3%
HELEMANO ELEM	38	0	0%
HOKULANI ELEM	20	0	0%
HOLOMUA ELEM	53	53	100%
IAO INTER	57	37	65%
IROQUOIS POINT ELEM	52	52	100%
JEFFERSON ELEM	34	1	3%
KAHULUI ELEM	58	9	16%
KAILUA INTER	63	4	6%
KAINALU ELEM	45	0	0%
KALAHEO ELEM	62	5	8%
KAMALII ELEM	45	45	100%
KAPOLEI ELEM	56	56	100%
KAPOLEI HIGH	128	128	100%
KAPOLEI MIDDLE	80	80	100%
KAUAI HIGH	74	4	5%
KAUMANA ELEM	16	0	0%
KEAAU HIGH	82	80	98%
KEAAU MIDDLE	50	12	24%
KEALAKEHE ELEM	56	5	9%
KEOLU ELEM	12	0	0%
KIHEI ELEM	50	50	100%
KOHALA HIGH	31	3	10%
KOHALA MIDDLE	18	1	6%
KONAWAENA ELEM	37	37	100%

LIHIKAI ELEM	57	5	9%
LIKELIKE ELEM	30	8	27%
LOKELANI INTER	44	38	86%
MAKAKILO ELEM	31	8	26%
MAKALAPA ELEM	43	11	26%
MAUI HIGH	102	26	25%
MAUI-WAENA INTER	69	20	29%
MAUNAWILI ELEM	30	3	10%
MILILANI HIGH	137	62	45%
MILILANI MIDDLE	74	74	100%
MILILANI UKA ELEM	53	1	2%
MOKAPU ELEM	46	6	13%
NANAKULI ELEM	38	12	32%
OLOMANA SCHOOL	21	4	19%
PAHOA ELEM	24	2	8%
PALISADES ELEM	28	1	4%
PAUOA ELEM	30	2	7%
POMAIIKA'I ELEM	45	45	100%
PUU KUKUI ELEM	37	37	100%
ROOSEVELT HIGH	81	51	63%
WAIAKEAWAENA ELEM	45	1	2%
WAIHEE ELEM	45	12	27%
WAILUKU ELEM	65	5	8%
WAIMANALO ELEM & INTER	47	9	19%
WAI MEA HIGH & INTER	58	10	17%

Comparison of Electricity Usage and Expenditure of Schools with Central Air Conditioning and Schools without Central Air Conditioning

#	School with Central Air Conditioning	SY 2014-15 Enrollment	May 2015 KwH	May 2015 \$	Comparable School (in same District) without Central Air Conditioning	SY 2014-15 Enrollment	May 2015 KwH	May 2015 \$	Difference
1	Ewa Makai Middle*	897	198,400	\$ 50,063.44	Ilima Intermediate	815	57,840	\$ 13,999.69	358%
2	Hickam****	563	NA	\$ 36,793.14	Pearl Harbor Kai	522	34,080	\$ 8,985.20	409%
3	Iroquois Point	727	67,280	\$ 17,975.05	Kaimiloa	650	40,320	\$ 9,999.88	180%
4	Kamehameha III	733	57,360	\$ 17,788.94	Nahienaena	724	28,224	\$ 8,695.97	205%
5	Kapolei***	1,086	89,520	\$ 22,858.78	Waipahu	1,086	60,400	\$ 15,766.83	145%
6	Kapolei High	2,024	126,400	\$ 70,282.05	Waipahu High	2,494	205,200	\$ 50,257.16	140%
7	Kapolei Middle**	1,435	149,040	\$ 35,537.71	Waipahu Intermediate	1,281	97,560	\$ 23,627.14	150%
8	Keoneula	894	101,040	\$ 24,601.80	Ewa Beach	731	40,080	\$ 10,061.97	245%
9	Kihei	864	53,760	\$ 17,177.56	Lihikai	897	31,440	\$ 10,039.48	171%
10	Lokelani Intermediate	553	61,800	\$ 18,701.78	Lahaina Intermediate	635	39,000	\$ 11,852.80	158%
11	Mali*	992	64,800	\$ 16,461.84	Leihoku	906	40,080	\$ 10,211.71	161%
12	Mililani Ike	873	70,560	\$ 17,951.16	Kaleiopuu	896	37,920	\$ 9,651.81	186%
13	Mililani Mauka	862	84,480	\$ 21,318.12	Mililani Waena	719	46,800	\$ 11,966.92	178%

#	School with Central Air Conditioning	SY 2014-15 Enrollment	May 2015 KwH	May 2015 \$	Comparable School (in same District) without Central Air Conditioning	SY 2014-15 Enrollment	May 2015 KwH	May 2015 \$	Difference
14	Mililani Middle**	1,766	166,000	\$ 41,007.10	Nanakuli High/Intermediate	1,043	104,400	\$ 24,942.07	164%
15	Nanaikapono	942	106,080	\$ 26,329.12	Ewa	1,143	50,560	\$ 12,343.31	213%
16	Pohakea	585	54,000	\$ 13,544.93	Makakilo	530	32,160	\$ 8,065.18	168%
17	Puu Kukui	655	58,200	\$ 18,870.44	Wailuku	704	33,126	\$ 10,713.92	176%
18	Puuhale	237	55,479	\$ 14,156.19	Aliiolani	243	25,920	\$ 6,844.01	207%
TOTALS		17,138	1,365,799	\$ 481,419.15		16,019	1,005,110	\$ 258,025.05	187%
<i>* includes cafeteria</i>									
<i>** multi-track school</i>									
<i>*** former multi-track school - regular schedule beginning SY 2015-16</i>									
<i>**** military base school - billing for month from Department of the Navy</i>									

HEAT ABATEMENT STATUS as of August 26, 2015									
School Name	No. of Classrooms	Total Classrms with A/C	% of Classrooms with A/C	Rank	Total	Ceiling Fan Projects	White Roofs & Insulation	Night Flushing	
AHRENS ELEM									
AHUMANU ELEM	28	1	4%	90	\$ 1,300,000.00				
AIEA ELEM				39	\$ 1,300,000.00				
AIEA HIGH				62	\$ 4,000,000.00				
AIEA INTERMEDIATE									
AIKAHI ELEM				77	\$ 1,300,000.00				
AINA HAINA ELEM				134	\$ 1,300,000.00				
ALA WAI ELEM									
ALIAMANU ELEM									
ALIAMANU MIDDLE				70	\$ 2,000,000.00				
ALVAH SCOTT ELEM				75	\$ 1,300,000.00				
ALIOLANI ELEM				35	\$ 1,300,000.00				
ANUENUE ELEM									
BALDWIN HIGH	105	23	22%	114	\$ 4,000,000.00				
BLANCHE POPE ELEM	27	11	41%	80	\$ 1,300,000.00				
BARBER'S POINT ELEM				150	\$ 1,300,000.00				
CAMPBELL HIGH				104	\$ 2,500,000.00				
CASTLE HIGH				129	\$ 4,000,000.00				
CENTRAL MIDDLE				107	\$ 2,000,000.00				
DE SILVA ELEM				120	\$ 1,300,000.00				
DOLE MIDDLE				59	\$ 2,000,000.00				
ELEEELE ELEM				21	\$ 1,300,000.00				
ENCHANTED LAKE ELEM	40	4	10%						
EWA BEACH ELEM									
EWA ELEM	48	26	54%	33	\$ 1,300,000.00				
EWA MAKAI MIDDLE	50	46	92%			N/A			
FARRINGTON HIGH									
FERN ELEM				42	\$ 1,300,000.00				
HAAHEO ELEM				6	\$ 1,300,000.00				
HAAHIONE ELEM	33	1	3%	72	\$ 1,300,000.00				
HAIKU ELEM				12	\$ 1,300,000.00				
HALE KULA ELEM									
HALEIWA ELEM		84.56		146	\$ 1,300,000.00				
HANA HIGH & ELEM									
HANALEI ELEM				14	\$ 1,300,000.00				
HAUULA ELEM				108	\$ 1,300,000.00				
HAWAII CENTER FOR THE DEAF AND BLIND				136	\$ 1,300,000.00				
HEEIA ELEM									
HELEMANO ELEM	38	5	13%						
HICKAM ELEM				154	\$ 1,300,000.00				
HIGHLANDS INTER									
HILO HIGH				122	\$ 4,000,000.00				
HILO INTER				121	\$ 2,000,000.00				
HILO UNION ELEM				5	\$ 1,300,000.00				
HOKULANI ELEM	20	0	0%						
HOLOMUA ELEM	53	53	100%	167	\$ 1,300,000.00	N/A			
HOLUALOA ELEM									
HONAUNAU ELEM									
HONOKAA ELEM									
HONOKAA HIGH & INTER				123	\$ 5,000,000.00				
HONOWAI ELEM									
HOOKELE ELEM									
HOOKENA ELEM				27	\$ 1,300,000.00				
IAO INTER	57	37	65%	52	\$ 2,000,000.00				
ILIAHI ELEM				144	\$ 1,300,000.00				
ILIMA INTER									
IROQUOIS POINT ELEM	52	52	100%	149	\$ 1,300,000.00	N/A			
JARRETT MIDDLE		85.73		56	\$ 2,000,000.00				
JEFFERSON ELEM	34	25	74%						
KAABA ELEM				1	\$ 1,300,000.00				
KAAHUMANU ELEM				22	\$ 1,300,000.00				
KAALA ELEM				64	\$ 1,300,000.00				
KAELEPULU ELEM				91	\$ 1,300,000.00				
KAEWAI ELEM									
KAHAKAI ELEM				126	\$ 1,300,000.00				
KAHALA ELEM									
KAHALUU ELEM				105	\$ 1,300,000.00				
KAHUKU ELEM				96	\$ 835,000.00				
KAHUKU HIGH & INTER				132	\$ 5,000,000.00				
KAHULUI ELEM	58	9	16%	36	\$ 1,300,000.00				
KAILUA ELEM	35	1	3%						
KAILUA HIGH	69	11	16%	73	\$ 4,000,000.00				
KAILUA INTER	63	4	6%						
KAIMILOA ELEM				163	\$ 1,300,000.00				
KAIMUKI HIGH				137	\$ 4,000,000.00				
KAIMUKI MIDDLE				138	\$ 2,000,000.00				

KAINALU ELEM	45	2	4%						
KAISER HIGH		84.49			156	\$ 4,000,000.00			
KAIULANI ELEM					23	\$ 835,000.00			
KALAHEO ELEM					128	\$ 1,300,000.00			
KALAHEO HIGH	62	30	48%		53	\$ 4,000,000.00			
KALAKAUA MIDDLE					139	\$ 2,000,000.00			
KALAMA INTER					115	\$ 2,000,000.00			
KALANI HIGH					157	\$ 4,000,000.00			
KALANIANAOLE ELEM & INTER					3	\$ 3,000,000.00			
KALEIOPUU ELEM									
KALIHI ELEM					140	\$ 1,300,000.00			
KALIHI KAI ELEM									
KALIHI UKA ELEM					30	\$ 1,300,000.00			
KALIHI WAENA ELEM					24	\$ 280,000.00			
KAMAKAHELEI MIDDLE					111	\$ 2,000,000.00			
KAMAILE ACADEMY							100%		
KAMALII ELEM	45	45	100%		97	\$ 400,000.00	N/A		
KAMEHAMEHA III ELEM					112	\$ 1,300,000.00			
KAMILOIKI ELEM					87	\$ 1,300,000.00			
KANEOHE ELEM					2	\$ 1,300,000.00			
KANOELANI ELEM									
KAPAA ELEM									
KAPAA HIGH									
KAPAA MIDDLE					98	\$ 2,000,000.00			
KAPALAMA ELEM					44	\$ 1,300,000.00			
KAPIOLANI ELEM					17	\$ 1,300,000.00			
KAPOLEI ELEM	56	56	100%		164	\$ 1,300,000.00	N/A		
KAPOLEI HIGH	128	128	100%		165	\$ 4,000,000.00	N/A		
KAPOLEI MIDDLE	80	80	100%		166	\$ 2,000,000.00	N/A		
KAPUNAHALA ELEM					68	\$ 1,300,000.00			
KAU HIGH & PAHALA ELEM							100%		
KAUAI HIGH	74	7	9%		13	\$ 4,000,000.00			
KAULUWELA ELEM					25	\$ 1,300,000.00			
KAUMANA ELEM	16	0	0%		4	\$ 1,300,000.00			
KAUMUALII ELEM					95	\$ 1,300,000.00			
KAUNAKAKAI ELEM					9	\$ 1,300,000.00			
KAWANANAKOA MIDDLE									
KE KULA O EHUNUIKAIMALINO									
KEAAU ELEM							100%		
KEAAU HIGH	82	80	98%				100%		
KEAAU MIDDLE	50	12	24%				100%		
KEALAKEHE ELEM	56	5	9%						
KEALAKEHE HIGH					159	\$ 4,000,000.00			
KEALAKEHE INTER					65	\$ 2,000,000.00			
KEAUKAHA ELEM					43	\$ 1,300,000.00			
KEKAHA ELEM									
KEKAULIKE HIGH					99	\$ 4,000,000.00			
KEOLU ELEM	12	0	0%		79	\$ 1,300,000.00			
KEONEPOKO ELEM					93	\$ 1,300,000.00	100%		
KEONEULA ELEMENTARY									
KIHEI ELEM	50	50	100%		117	\$ 1,300,000.00	N/A		
KILAUWA ELEM					37	\$ 1,300,000.00			
KILOHANA ELEM					15	\$ 1,300,000.00			
KING INTER					127	\$ 2,000,000.00			
KIPAPA ELEM									
KOHALA ELEM					10	\$ 1,300,000.00			
KOHALA HIGH	31	3	10%		38	\$ 4,000,000.00			
KOHALA MIDDLE	18	1	6%		11	\$ 2,000,000.00			
KOKO HEAD ELEM					155	\$ 1,300,000.00			
KOLOA ELEM									
KONAWAENA ELEM	37	37	100%		124	\$ 1,300,000.00	N/A		
KONAWAENA HIGH					125	\$ 4,000,000.00			
KONAWAENA MIDDLE									
KUALAPUU ELEM									
KUHIO ELEM					31	\$ 1,300,000.00			
KULA ELEM					116	\$ 1,300,000.00			
LAHAINA INTER					158	\$ 2,000,000.00			
LAHAINALUNA HIGH					113	\$ 4,000,000.00			
LAIE ELEM					131	\$ 1,300,000.00			
LANAI HIGH & ELEM					18	\$ 5,000,000.00			
LANAKILA ELEM									
LANIKAI ELEM					71	\$ 1,300,000.00			
LEHUA ELEM									
LEIHOKU ELEM							100%		
LEILEHUA HIGH									
LIHIKAI ELEM	57	5	9%						
LIHOLIHO ELEM					47	\$ 1,300,000.00			
LIKELIKE ELEM	30	8	27%		40	\$ 1,300,000.00			
LINAPUNI ELEM					74	\$ 1,300,000.00			
LINCOLN ELEM					29	\$ 1,300,000.00			
LINEKONA ELEM									
LOKELANI INTER	44	38	86%		100	\$ 2,000,000.00			
LUNALILO ELEM									
MAEMAE ELEM					133	\$ 1,300,000.00			
MAILI ELEM							N/A		
MAKAHA ELEM							100%		
MAKAKILO ELEM	31	8	26%		151	\$ 1,300,000.00			
MAKALAPA ELEM	43	13	30%		88	\$ 1,300,000.00			
MAKAWAO ELEM					32	\$ 1,300,000.00			
MANANA ELEM									
MANOA ELEM									
MAUI HIGH	102	26	25%						
MAUI-WAENA INTER	69	20	29%		101	\$ 2,000,000.00			
MAUKA LANI ELEM									
MAUNALOA ELEM					28	\$ 1,300,000.00			
MAUNAWILI ELEM	30	3	10%		60	\$ 1,300,000.00			

