


STATE OF HAWAII
DEPARTMENT OF EDUCATION
KA 'OIHANA HO'ONA'AUAO
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OFFICE OF THE DEPUTY SUPERINTENDENT OF OPERATIONS

April 11, 2024

TO: The Honorable Ken Kuraya
Chairperson, Finance and Infrastructure Committee

FROM: Curt T. Otaguro 
Deputy Superintendent of Operations

SUBJECT: Update on Status of Schools' Fire Alarm Systems

1. EXECUTIVE SUMMARY

Since the Finance and Infrastructure Committee meeting update on March 7, 2024, the Hawaii State Department of Education (Department) accomplished key tasks aligned with the Strategic Plan Goal 3.1.2. This goal focuses on ensuring that our school facility systems are responsive, efficient, and capable of addressing all needs promptly.

- Review of fire alarm systems for effectiveness, including addressable systems, to enhance monitoring and ensure industry compliance.
- The status of schools' fire alarm systems is outlined in the attachment, categorizing them by operability and age, emphasizing the necessity for replacements and mitigation strategies.

2. DESCRIPTION

Status update on the Department's Fire Safety Program and the current state of the Department's fire alarm systems and plan.

3. UPDATE

Fire Alarm Replacement Plan

Last month's report introduced a Fire Alarm Replacement Plan for school safety, emphasizing proactive management strategies. This plan included quick repair for important parts, minimizing system downtime, and replacing parts based on how reliable they are and cost estimates. Also, using asset management systems to track fire alarm systems lifespans.

The Department is actively assessing its fire alarm systems to ensure optimal functionality and adopting addressable systems for improved monitoring and compliance. Addressable fire alarm systems are advanced systems that can pinpoint the exact location of a fire or fault within a building, making it easier to manage and respond to emergencies. Conventional fire alarm systems divide a building into zones and can only indicate the general area where an alarm is triggered, requiring manual inspection to locate the exact source.

Schools' Fire Alarm Systems

As of April 1, 2024, the status of school fire alarm systems is as follows:

1. 22 schools have inoperable fire alarm systems and have resorted to implementing a manual fire watch plan.
2. 68 schools are equipped with operable fire alarm systems that exceed 20 years in age, with no replacement parts available.
3. 71 schools maintain operable fire alarm systems, either 20 years old or with unavailable replacement parts.
4. 102 schools are equipped with operable fire alarm systems, with ages not exceeding 20 years and readily available replacement parts.

The inclusion of the King Kamehameha III campus in this report is attributed to its recent opening on April 1, 2024.

The list provided categorizes schools based on their fire alarm system status using a legend: (1) for inoperable systems; (2) for operable fire alarm systems that exceed 20 years in age, with no replacement parts available; (3) for operable fire alarm systems, either 20 years old or with unavailable replacement parts; and (4) for operable fire alarm systems, with ages not exceeding 20 years and readily available replacement parts.

Inoperable Fire Alarm Mitigation Strategies

In an effort to enhance the manual fire watch process, the Department has initiated a pilot program aimed at introducing an interim solution that enables any school staff member with a wearable device to trigger a fire alarm event. Upon activation, the device promptly sends an alert along with location information to the Revolution mass notification system. This system then initiates two simultaneous actions: 1) dispatches a fire alert message to all school phones and Internet Protocol (IP) speakers, activating fire drill protocols until canceled by school administrators; 2) notifies designated school administrators, including principals, vice principals, and other pre-designated staff members, of the fire alert and the location where the alert originated, all through the Safety Shield mobile application.

The pilot program at Kapalama Elementary School had a successful fire drill on March 28, 2024 and demonstrated the system's effectiveness, with the Safety Shield wearable device activated, prompting a campus-wide alert within 42 seconds. Subsequently, all phones and IP speakers broadcasted the fire evacuation signal, facilitating the quick relocation of students to their designated areas within five minutes. The school office efficiently managed the drill, notifying teachers to return to their classrooms upon its completion. To support this initiative,

the Office of Information Technology Services procured 125 Safety Shield wearable devices, 117 IP endpoint licenses, and two site licenses, ensuring seamless integration with existing infrastructure. Engineering support and collaboration with AT&T enabled the deployment of Long Term Evolution data links for all devices, while configuration adjustments and application conversions streamlined operations at Kapalama Elementary School and other test sites. However, pending tasks such as labor relations consultations, funding allocation, and plan updates with the fire department highlight the ongoing commitment required to expand Safety Shield deployments to additional schools, with initial efforts focused on Kainalu and Konawaena Elementary Schools.

In addition to the pilot program, the Department is also exploring wireless fire systems for quick deployment in schools that have implemented fire watch plans. The Department is optimistic that this approach will complement the Safety Shield Wearable device and further enhance the manual fire watch process as the Department works towards replacing fire alarm systems. Specifically, there are two wireless technologies being considered. Depending on the size of the school and what portion of the fire alarm system is down, a construction grade wireless fire alarm system may prove to show equivalency to the impaired fire alarm system. For larger schools, a commercial grade wireless fire alarm system may be beneficial.

Engineering and design specifications dictate that replacement fire alarm control panels be installed at all three schools: Kainalu Elementary School, Kapalama Elementary School, and Konawaena Elementary School. Funds have been secured, and contracts have been signed to procure and install the necessary equipment. The goal is to have all control panels operational by summer 2024. However, recent procurement delays have resulted in parts not arriving on time. Communication with the contractor confirms their understanding of the urgency to restore the systems, and they are making every effort to expedite the process.

Furthermore, ongoing discussions are taking place with all four counties to ensure that the Department receives guidance from the appropriate subject matter experts, in implementing fire safety strategies. The initial drafts of mitigation plans have been submitted to the respective counties, and the Department will continue to refine these plans based on feedback received from individual fire departments. It's worth mentioning that the Department had the privilege of hosting Captain Dillman from the Honolulu Fire Department during the test run at Kapalama Elementary School, as mentioned earlier.

The Department is dedicated to improving safety with proactive management and regular evaluations of fire alarm systems to ensure they work effectively. The recent update on school fire alarms highlights our ongoing commitment to safety. Despite challenges, we continue to seek innovative solutions while prioritizing a safe and secure learning environment.

CTO:jk
Attachment

c: Keith T. Hayashi, Superintendent
Audrey Hidano, Interim Assistant Superintendent, Office of Facilities and Operations
Facilities Development Branch

SCHOOLS' FIRE ALARM SYSTEMS

Legend:

1. Red - Inoperable systems.
2. Yellow - Operable fire alarm systems that exceed 20 years in age, with no replacement parts available.
3. Light Green - Operable fire alarm systems, either 20 years old or with unavailable replacement parts.
4. Dark Green - Operable fire alarm systems, with ages not exceeding 20 years and readily available replacement parts.

School Name	Priority	Status	Age	Estimated Completion
BALDWIN HIGH	1	PARTIALLY INOPERABLE	9	Maintenance Contractor to Fix TBD
HEEIA ELEM	1	ENTIRE CAMPUS INOPERABLE	28	System Replacement 7/1/2024
HILO INTER	1	PARTIALLY INOPERABLE	21	System Replacement 7/1/2027
KAHALUU ELEM	1	PARTIALLY INOPERABLE	0	System Replacement Pending System Cert
KAHUKU HIGH/INTER	1	ENTIRE CAMPUS INOPERABLE	19	System Replacement 3/28/2025
KAINALU ELEM	1	ENTIRE CAMPUS INOPERABLE	39	Replace Control Panel estimate 8/1/2025
KALAHEO HIGH	1	PARTIALLY INOPERABLE	4	Maintenance Contractor to Fix TBD
KAPAA HIGH	1	PARTIALLY INOPERABLE	23	System Replacement 7/1/2026
KAPALAMA ELEM	1	ENTIRE CAMPUS INOPERABLE	22	Replace Control Panel estimate 8/1/2025
KAUMUALII ELEM	1	ENTIRE CAMPUS INOPERABLE	24	System Replacement 10/6/2024
KEONEULA ELEM	1	PARTIALLY INOPERABLE – ELEVATOR ONLY	18	Maintenance Contractor to Fix TBD
KOKO HEAD ELEM	1	PARTIALLY INOPERABLE	6	Maintenance Contractor to Fix TBD
KONAWAENA ELEM	1	ENTIRE CAMPUS INOPERABLE	24	Replace Control Panel estimate 8/1/2025
KONAWAENA MIDDLE	1	PARTIALLY INOPERABLE	24	Pending School Initiated Contractor
KUHIO ELEM	1	ENTIRE CAMPUS INOPERABLE	19	System Replacement 9/20/2024
LAIE ELEM	1	ENTIRE CAMPUS INOPERABLE	28	System Replacement 9/21/2024

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School Name	Priority	Status	Age	Estimated Completion
OLOMANA SCHOOL	1	PARTIALLY INOPERABLE	0	System Replacement Pending System Cert
PEARL CITY HIGH	1	PARTIALLY INOPERABLE	24	System Replacement 10/11/2024
SOLOMON ELEM	1	PARTIALLY INOPERABLE	5	Pending Roof Repair 8/1/2024
SUNSET BEACH ELEM	1	ENTIRE CAMPUS INOPERABLE	33	System Replacement 1/4/2025
WAIALUA HIGH/INTER	1	PARTIALLY INOPERABLE	6	Maintenance Contractor to Fix TBD
WAIMEA ELEM	1	PARTIALLY INOPERABLE	7	Maintenance Contractor to Fix TBD
ALIOLANI ELEM	2	OPERATING	29	-
ANUENUE ELEM	2	OPERATING	23	-
AUGUST AHRENS ELEM	2	OPERATING	21	6/30/2025
DE SILVA ELEM	2	OPERATING	25	-
HAIKU ELEM	2	OPERATING	24	-
HANAIEI ELEM	2	OPERATING	28	-
HAUULA ELEM	2	OPERATING	23	-
HAWAII SCHOOL FOR DEAF AND BLIND	2	OPERATING	24	7/1/2026
HIGHLANDS INTER	2	OPERATING	20	-
HILO HIGH	2	OPERATING	22	-
HILO UNION ELEM	2	OPERATING	22	-
HONAUNAU ELEM	2	OPERATING	21	-
HOOKENA ELEM	2	OPERATING	27	-
IAO INTER	2	OPERATING	28	-
IROQUOIS POINT ELEM	2	OPERATING	23	-
JARRETT MIDDLE	2	OPERATING	20	7/1/2026
JEFFERSON ELEM	2	OPERATING	29	-
KAHUMANU ELEM	2	OPERATING	22	-
KAELEPULU ELEM	2	OPERATING	22	-
KAHAKAI ELEM	2	OPERATING	22	-
KAHUKU ELEM	2	OPERATING	29	-
KAILUA ELEM	2	OPERATING	24	-
KAILUA INTER	2	OPERATING	22	-
KAIMUKI HIGH	2	OPERATING	29	7/29/2025
KALANI HIGH	2	OPERATING	22	-
KALANIANAOLE ELEM & INTER	2	OPERATING	30	-
KALEIOPUU ELEM	2	OPERATING	23	-

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School Name	Priority	Status	Age	Estimated Completion
KALIHI KAI ELEM	2	OPERATING	21	-
KAMAKAHELEI MIDDLE	2	OPERATING	25	-
KAMALII ELEM	2	OPERATING	28	-
KAPOLEI HIGH	2	OPERATING	24	-
KAPOLEI MIDDLE	2	OPERATING	25	-
KAULUWELA ELEM	2	OPERATING	21	2/1/2025
KAUMANA ELEM	2	OPERATING	24	-
KAWANANAKOA MIDDLE	2	OPERATING	24	-
KEAAU MIDDLE	2	OPERATING	23	-
KEALAKEHE ELEM	2	OPERATING	21	6/30/2026
KEALAKEHE INTER	2	OPERATING	21	6/30/2026
KEKAHA ELEM	2	OPERATING	21	-
KOHALA ELEM	2	OPERATING	22	-
KOHALA MIDDLE	2	OPERATING	21	6/30/2026
KOLOA ELEM	2	OPERATING	33	12/31/2026
KUALAPUU ELEMENTARY SCHOOL PCS	2	OPERATING	-	-
KULA ELEM	2	OPERATING	24	-
LAUPAHOEHOE COMMUNITY PCS	2	OPERATING	27	-
LEIHOKU ELEM	2	OPERATING	34	-
MAEMAE ELEM	2	OPERATING	21	6/30/2025
MAILI ELEM	2	OPERATING	25	-
MAUNALOA ELEM	2	OPERATING	21	-
MCKINLEY HIGH	2	OPERATING	34	-
MOANALUA MIDDLE	2	OPERATING	27	6/30/2026
MOLOKAI HIGH	2	OPERATING	26	12/31/2025
MOLOKAI MIDDLE	2	OPERATING	26	-
NAALEHU ELEM	2	OPERATING	21	-
PAAUILO ELEM AND INTER	2	OPERATING	21	-
PAHOA ELEM	2	OPERATING	26	-
PAUOA ELEM	2	OPERATING	24	-
PEARL CITY HIGHLANDS ELEM	2	OPERATING	22	-
PEARL RIDGE ELEM	2	OPERATING	23	-
RED HILL ELEM	2	OPERATING	21	-
SCOTT (ALVA) ELEM	2	OPERATING	27	-
WAIAKEA ELEM	2	OPERATING	21	-

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School Name	Priority	Status	Age	Estimated Completion
WAIAKEA HIGH	2	OPERATING	24	-
WAIAKEAWAENA ELEM	2	OPERATING	28	-
WAIMEA HIGH	2	OPERATING	29	7/1/2026
WAIPAHU INTER	2	OPERATING	29	6/26/2024
WILCOX ELEM	2	OPERATING	44	12/31/2025
WILSON ELEM	2	OPERATING	22	-
AHUIMANU ELEM	3	OPERATING	17	-
AIEA ELEM	3	OPERATING	22	-
ALA WAI ELEM	3	OPERATING	21	-
ALIAMANU MIDDLE	3	OPERATING	21	-
BARBERS POINT ELEM	3	OPERATING	20	-
CAMPBELL HIGH	3	OPERATING	22	-
DOLE MIDDLE	3	OPERATING	4	-
ENCHANTED LAKE ELEM	3	OPERATING	27	-
EWA BEACH ELEM	3	OPERATING	18	-
EWA ELEM	3	OPERATING	16	7/1/2026
FERN ELEM	3	OPERATING	23	7/13/2024
HAHAIONE ELEM	3	OPERATING	19	-
HALEIWA ELEM	3	OPERATING	8	-
HANA HIGH AND ELEM	3	OPERATING	16	-
HELEMANO ELEM	3	OPERATING	19	-
HOLUALOA ELEM	3	OPERATING	5	-
HONOKAA ELEM	3	OPERATING	10	-
HONOKAA INTER & HIGH	3	OPERATING	14	-
KAILUA HIGH	3	OPERATING	22	-
KAIMILOA ELEM	3	OPERATING	18	-
KANEOHE ELEM	3	OPERATING	23	-
KAU HIGH & PAHALA ELEM	3	OPERATING	27	-
KAUAI HIGH	3	OPERATING	29	12/31/2026
KAUNAKAKAI ELEM	3	OPERATING	17	-
KE KULA O EHUNUIKAIMALINO	3	OPERATING	10	7/10/2024
KEAAU ELEM	3	OPERATING	2	-
KEAAU HIGH	3	OPERATING	21	-
KEALAKEHE HIGH	3	OPERATING	28	-
KEAUKAHA ELEM	3	OPERATING	29	-

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School Name	Priority	Status	Age	Estimated Completion
KILOHANA ELEM	3	OPERATING	18	-
KIPAPA ELEM	3	OPERATING	20	-
KOHALA HIGH	3	OPERATING	22	-
KONAWAENA HIGH	3	OPERATING	14	12/31/2026
LAHAINA INTER	3	OPERATING	29	-
LEHUA ELEM	3	OPERATING	15	-
LIKELIKE ELEM	3	OPERATING	-	-
LINAPUNI ELEM	3	OPERATING	14	-
MAKAWAO ELEM	3	OPERATING	22	-
MAUI HIGH	3	OPERATING	27	-
MAUKA LANI ELEM	3	OPERATING	28	-
MAUNAWILI ELEM	3	OPERATING	19	-
MILILANI UKA ELEM	3	OPERATING	28	-
MILILANI WAENA ELEM	3	OPERATING	19	-
MOANALUA HIGH	3	OPERATING	21	-
PALISADES ELEM	3	OPERATING	15	-
PALOLO ELEM	3	OPERATING	19	-
PARKER ELEM	3	OPERATING	5	-
PEARL CITY ELEM	3	OPERATING	18	-
PEARL HARBOR ELEM	3	OPERATING	20	-
PEARL HARBOR KAI ELEM	3	OPERATING	19	-
POHAKEA ELEM	3	OPERATING	33	-
POPE ELEM	3	OPERATING	21	-
PUOHALA ELEM	3	OPERATING	20	-
PUUHALE ELEM	3	OPERATING	10	-
ROOSEVELT HIGH	3	OPERATING	16	-
ROYAL ELEM	3	OPERATING	5	-
STEVENSON MIDDLE	3	OPERATING	26	-
WAHIAWA ELEM	3	OPERATING	20	-
WAHIAWA MIDDLE	3	OPERATING	20	-
WAIALUA ELEM	3	OPERATING	19	-
WAIANAE ELEM	3	OPERATING	3	-
WAIANAE INTER	3	OPERATING	27	3/30/2027
WAIHEE ELEM	3	OPERATING	8	-
WAILUKU ELEM	3	OPERATING	12	-
WAIMALU ELEM	3	OPERATING	23	-
WAIMEA MIDDLE SCHOOL PCS	3	OPERATING	30	-

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School Name	Priority	Status	Age	Estimated Completion
WAIPAHU ELEM	3	OPERATING	22	-
WAIPAHU HIGH	3	OPERATING	30	-
WASHINGTON MIDDLE	3	OPERATING	25	-
WEBLING ELEM	3	OPERATING	7	-
WHEELER ELEM	3	OPERATING	24	-
AIEA HIGH	4	OPERATING	6	-
AIEA INTER	4	OPERATING	5	-
AIKAHI ELEM	4	OPERATING	9	-
AINA HAINA ELEM	4	OPERATING	3	-
ALIAMANU ELEM	4	OPERATING	16	-
CASTLE HIGH	4	OPERATING	5	-
CENTRAL MIDDLE	4	OPERATING	14	-
ELEELE ELEM	4	OPERATING	14	-
EWA MAKAI MIDDLE	4	OPERATING	13	-
FARRINGTON HIGH	4	OPERATING	20	-
HAAHEO ELEM	4	OPERATING	2	-
HICKAM ELEM	4	OPERATING	15	-
HOKULANI ELEM	4	OPERATING	19	-
HOLOMUA ELEM	4	OPERATING	2	-
HONOULIULI MIDDLE	4	OPERATING	3	-
HONOWAI ELEM	4	OPERATING	19	-
HOOKELE ELEM	4	OPERATING	9	-
ILIAHI ELEM	4	OPERATING	7	-
ILIMA INTER	4	OPERATING	19	-
INOUYE ELEM	4	OPERATING	16	-
KAAAWA ELEM	4	OPERATING	3	-
KAALA ELEM	4	OPERATING	16	-
KAEWAI ELEM	4	OPERATING	1	-
KAHALA ELEM	4	OPERATING	20	-
KAHULUI ELEM	4	OPERATING	9	-
KAIMUKI MIDDLE	4	OPERATING	1	-
KAISER HIGH	4	OPERATING	17	-
KAIULANI ELEM	4	OPERATING	15	-
KALAHEO ELEM	4	OPERATING	11	-
KALAKAUA MIDDLE	4	OPERATING	3	-
KALAMA INTER	4	OPERATING	3	-
KALIHI ELEM	4	OPERATING	10	-
KALIHI UKA ELEM	4	OPERATING	3	-
KALIHI WAENA ELEM	4	OPERATING	11	-

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School Name	Priority	Status	Age	Estimated Completion
KAMAILE ACADEMY PCS	4	OPERATING	12	-
KAMILOIKI ELEM	4	OPERATING	2	-
KANOELANI ELEM	4	OPERATING	8	-
KAOHAO ELEM PCS	4	OPERATING	0	-
KAPAA ELEM	4	OPERATING	4	-
KAPAA MIDDLE	4	OPERATING	2	-
KAPIOLANI ELEM	4	OPERATING	12	-
KAPOLEI ELEM	4	OPERATING	12	-
KAPUNAHALA ELEM	4	OPERATING	1	-
KEKAULIKE HIGH	4	OPERATING	0	-
KEOLU ELEM	4	OPERATING	20	-
KEONEPOKO ELEM	4	OPERATING	0	-
KIHEI ELEM	4	OPERATING	11	-
KILAUEA ELEM	4	OPERATING	3	-
KING INTER	4	OPERATING	5	-
KULANIHAKOI HIGH	4	OPERATING	3	-
LAHAINALUNA HIGH	4	OPERATING	18	.
LANAI HIGH AND ELEM	4	OPERATING	8	-
LANAKILA ELEM	4	OPERATING	13	-
LEILEHUA HIGH	4	OPERATING	16	.
LIHIKAI ELEM	4	OPERATING	3	-
LIHOLIHO ELEM	4	OPERATING	16	-
LINCOLN ELEM	4	OPERATING	15	-
LOKELANI INTER	4	OPERATING	8	-
LUNALILO ELEM	4	OPERATING	16	-
MAKAHA ELEM	4	OPERATING	8	-
MAKAKILO ELEM	4	OPERATING	15	-
MAKALAPA ELEM	4	OPERATING	15	-
MANANA ELEM	4	OPERATING	11	-
MANOA ELEM	4	OPERATING	18	-
MAUI WAENA INTER	4	OPERATING	3	-
MILILANI HIGH	4	OPERATING	5	-
MILILANI IKE ELEM	4	OPERATING	19	-
MILILANI MAUKA ELEM	4	OPERATING	6	-
MILILANI MIDDLE	4	OPERATING	10	-
MOANALUA ELEM	4	OPERATING	6	-
MOKAPU ELEM	4	OPERATING	1	-
MOKULELE ELEM	4	OPERATING	4	-

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School Name	Priority	Status	Age	Estimated Completion
MOMILANI ELEM	4	OPERATING	9	-
MOUNTAIN VIEW ELEM	4	OPERATING	10	-
NAHIENAENA ELEM	4	OPERATING	3	-
NANAIKAPONO ELEM	4	OPERATING	20	-
NANAKULI ELEM	4	OPERATING	16	-
NANAKULI HIGH/INTER	4	OPERATING	19	-
NIMITZ ELEM	4	OPERATING	8	-
NIU VALLEY MIDDLE	4	OPERATING	14	-
NOELANI ELEM	4	OPERATING	19	-
NUUANU ELEM	4	OPERATING	0	.
PAHOA HIGH AND INTER	4	OPERATING	8	-
PAIA ELEM	4	OPERATING	9	-
POMAIKAI ELEM	4	OPERATING	17	-
PUKALANI ELEM	4	OPERATING	10	-
PUU KUKUI ELEM	4	OPERATING	11	-
RADFORD HIGH	4	OPERATING	16	-
SALT LAKE ELEM	4	OPERATING	16	-
SHAFTER ELEM	4	OPERATING	15	-
WAIAHOLE ELEM	4	OPERATING	9	-
WAIAKEA INTER	4	OPERATING	4	-
WAIALAE ELEMENTARY PCS	4	OPERATING	7	-
WAIANAE HIGH	4	OPERATING	13	-
WAIAU ELEM	4	OPERATING	8	-
WAIKELE ELEM	4	OPERATING	10	-
WAIKIKI ELEM	4	OPERATING	10	-
WAIKOLOA ELEM & MIDDLE	4	OPERATING	19	-
WAIMANALO ELEM & INTER	4	OPERATING	7	-
WAIMEA CANYON MIDDLE	4	OPERATING	3	-
WHEELER INTER	4	OPERATING	9	-
KAMEHAMEHA III ELEM SCHOOL	4	OPERATING	0	-
NIIHAU SCHOOL	9	UNKNOWN	-	-