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**OAKLAND UNIFIED
SCHOOL DISTRICT**
Community Schools, Thriving Students

Memo

To Board of Education

From Facilities Committee
Jody London, Chairperson
Roseann Torres
Gary Yee

Staff

Kyla Johnson Trammell
Timothy White

Board Meeting Date November 13, 2019

Subject Adoption of Fire Alarm Master Plan

Action

Approval by the Board of Education, upon recommendation of the Facilities Committee, of a District Facilities Fire Alarm Master Plan.

Background/Discussion

This Fire Alarm Master Plan provides a primary input to the Facilities Master Plan and resulting Capital Building Programs. The selection, design, and installation of the Fire Alarms throughout the District also have a direct relationship to maintenance and repair loads and the capacity of Buildings & Grounds to support safe facilities Districtwide.

The Fire Alarm Master Plan presents a history of Fire Alarm work since the 1990s, reviews the issues that have been addressed over the last 20 years and presents a plan for moving forward into the next couple of decades. The Fire Alarm Master plan proposes a level of funding needed to properly maintain and replace our Fire Alarm Systems on a yearly basis and proposes that

1. the maintenance portion of the work be budgeted for in RRMA,
2. some of the fire alarm replacement projects be budgeted for in Deferred Maintenance, and
3. We continue to fund some Fire Alarm work through State and Local Bond funds when that work is part of a larger site improvement project.

Fiscal Impact

The Fire Alarm Master Plan proposes that OUSD budget:

4. \$1.3 million/year for the maintenance portion of the work be budgeted for in RRMA,
5. \$1.25 million/year for fire alarm replacement projects be budgeted for in Deferred Maintenance, and

Recommendation

Approval by the Board of Education, upon recommendation of the Facilities Committee, of a District Facilities Fire Alarm Master Plan.

Attachment

Facilities Fire Alarm Master Plan

OAKLAND UNIFIED SCHOOL DISTRICT
DEPARTMENT OF FACILITIES PLANNING & MANAGEMENT

Fire Alarm Master Plan
October 18, 2019

This Fire Alarm Master Plan provides a primary input to the Facilities Master Plan and resulting Capital Building Programs. The selection, design, and installation of the Fire Alarms throughout the District also have a direct relationship to maintenance and repair loads and the capacity of Buildings & Grounds to support safe facilities Districtwide.

The primary purpose of a fire alarm system is the support health and safety by providing notice of fire events to allow safe evacuation of fire areas, information to first responders on fire status and property protection by providing remote notification of fire events and triggering of local alarms.

HISTORY

Prior to the mid 1990's OUSD had not addressed fire alarm deficiencies in a major way since the Marcus Foster Capital Improvement Program in the 1970's. The Marcus Foster Capital Improvement Program was focused on seismic safety improvements and included fire alarm work when required by the State Architect.

In the 1990's OUSD passed a local Bond (Measure C). Measure C was the first local bond in almost 20 years and passage allowed OUSD to participate in the Leroy Green State School Construction program and leverage State funds with local dollars to modernize many schools. The fire alarm work associated with this construction program was limited to the areas of each campus being modernized.

A second round of modernizations followed in the early 2000's funded in part by Measure A. The fire alarm work was similarly piecemealed resulting in campuses with multiple fire alarm systems of various makes and models. The fire alarm work completed in these first two rounds of modernization was completed in the most economical way possible to comply with State Architect requirements and Fire Code.

During this same period Buildings & Grounds (B&G) went through multiple downsizings. This combination of loss of experienced service electricians and increase in complexity and variety of fire alarm systems required some new solutions.

Following these first two rounds of modernizations, Facilities worked closely with Buildings & Grounds to develop Fire Alarm design and installation standards to ensure that future fire alarm systems could be monitored and maintained by B&G.

In order to support improved fire alarm maintenance and repair we have standardized on a single manufacturer (Simplex - recently renamed Johnson Controls) to enable B&G to train and retain qualified staff to repair and maintain increasingly complex and technical systems.

We have also undertaken a design and construction oversight protocol to ensure that new systems are designed and installed correctly. For each fire alarm project or larger project that involves fire alarms we also contract with the Fire Alarm design reviewer and the construction installation monitor for this specialized technical installation.

ISSUES

One of the repeated concerns we have heard is regarding the number of fire alarm related contracts, sometimes repeated on the same site. Over the last twenty five years or so, we may have undertaken multiple fire alarm projects at some sites. A sample scenario would be:

1. First round Mod - New Fire Alarm on Bldg A
2. Second Round Mod - New Fire Alarm on Gym and Bld B
3. Fire Alarm upgrade project - Changing out a complete site to a single manufacturer current code system
4. Portable replacement project (at the same site) - redesign and construction of fire alarm modifications required due to portable replacement.

Each of the projects (1-4) will have multiple contracts including:

1. Architect or Engineer to design the system or modification
2. Inspector of Record as required by DSA
3. Fire Alarm special Design and Construction oversight consultants
4. Installation contractor

Other drivers of multiple projects on some sites in a 20 year cycle are:

1. Fire Alarm Code is upgraded every 3 years. At each adoption cycle new features and protocols are required. For example the last code adoption now requires a voice notification in addition to alarm horns to better assist sight impaired in evacuation.
2. Fire Alarm manufacturers are constantly upgrading their products to meet the code requirements and to provide additional features to improve monitoring and safety.
3. All School Fire Alarm components must be listed with the State Fire Marshal. Listing requires regular retesting of the listed product with UL or similar and as a consequence manufactures regularly lapse the listing of older products once it is no longer viable to produce spare parts for repair.

As we only have a limited amount of funding in relation to our overall need fire alarm work must be prioritized against other critical work and the need to provide improvements to support improved educational performance combined with the code upgrades, listing requirements, and

manufacturers improvements we must budget a reasonable amount of funding for fire alarm capital replacement year over year.

THE FUTURE

We have been focused on providing Buildings & Grounds a solid foundation of systems that are standardized and reduce maintenance expenses and time through remote notification of equipment malfunctions and remote diagnostics. These systems allow B&G electricians to know what part or component needs replacement or service before they leave the shop so they can have the right part on the truck. These systems also support remote monitoring so B&G can help respond to alarms and cancel false alarms on off hours. These efficiencies are offset in higher costs for increasingly complex technology. Our overall costs are up over time.

OUSD has prioritized fire alarm needs based on replacement of outdated systems as spare parts become unavailable. More of our buildings are protected by more up to date and reliable systems. Our future needs can now be planned for based on expected end of life dates rather than urgent projects to replace failed systems.

It is important to remember that a fire alarm is a piece of technology and has an expected life significantly shorter than a building system like windows, doors, or ventilation. Appended to this report is a summary of the fire alarm work at our sites with costs to date, expected life, and recommended budget for replacement.

The appended report summarizes our fire alarm improvements at every site and includes the model of the main control panel and approximate timeframe for replacement. Districtwide (108 sites), we have spent an average of \$1.3 million/year on routine maintenance and repair. We anticipate these costs to continue at the same level for the foreseeable future. The efficiencies gained in remote diagnostics and repair are offset by the increased cost of components and training necessary to properly service the equipment.

Based on the data from the Jacobs report (site condition data for the Blueprint) we should be budgeting \$4.25 million/year into the future to be able to replace these systems. This budget need will be split between Deferred Maintenance and Capital Funding with Deferred Maintenance funding the Fire Alarm only projects and the Capital Fund funding the fire alarm portion of larger site improvement projects.

Attached is a Summary of all Fire Alarm Systems

FIRE ALARM MASTER PLAN

Site Name	Site Address	Panel Type	Age Range	Replacement Years (Range)
Marshall ES/East Bay Innovation Acad	3400 Malcolm Ave 94605	4020 4009 D8112	1992-2001	2020-2029
Achieve & World Academy Charter @ Hawthorne	1700 28th Avenue 94621	4020 (5) 4009 Bosch D8112	1992-2001	2020-2029
Barack Obama @ Toler / Francophone Charter	9736 Lawlor Street 94605	4020 4009 Bosch 9412GV4	1992-2001	2020-2029
Brookfield ES & CDC	401 Jones Ave 94603	4020 (2) 4009 Bosch D8112 FireLite MS9200 (CDC) Bosch (CDC)	1992-2001	2020-2029
Carl Munck ES	11900 Campus Dr 94619	4010 Bosch 8112	1992-2001	2020-2029
Claremont MS	5750 College Ave 94618	4020 (2) 4009 Bosch D8112	1992-2001	2020-2029
Dewey High School	1111 2nd Avenue 94606	4020 4009 Bosch 9412	1992-2001	2020-2029
East Oakland Pride @ Webster Academy	8000 Birch St 94621	4010 (3) 4009 Bosch D8112	1992-2001	2020-2029
Santa Fe ES/CDC	915 54th St 94608	4020 (2) D9412GV4 4009	1992-2001	2020-2029
Franklin ES	915 Foothill Blvd 94606	4020 (2) 4009 Bosch D9412GV2	1992-2001	2020-2029
Fruitvale/Fruitvale CDC	3200 Boston Ave 94602	4020 (2) 4009 (2) Bosch	1992-2001	2020-2029
Garfield ES	1640 22nd Ave 94606	4020 (3) 4009 Bosch D9412GV2	1992-2001	2020-2029
Grass Valley ES & CDC	4720 Dunkirk Ave 94605	4020 4001 (CDC) 4009 (2) Radionics (1-CDC)	1992-2001	2020-2029
Lakeview ES/ (American Indian - Charter)	746 Grand Ave 94610	4020 4009 FireLite MS9200 (CDC) ? Bosch D9412GV2	1992-2001	2020-2029
Melrose Leadership @ Maxwell Park	4730 Fleming Ave 94619	4020 Bosch D9412GV2	1992-2001	2020-2029
Rudsdale/Oakland SOL	1180 70th Ave 94621	4020 Bosch D9412GV2	1992-2001	2020-2029
Sequoia ES	3730 Lincoln Ave 94602	4020 4009 Bosch 9412GV4	1992-2001	2020-2029
Street Academy	417 29th St 94609	4020 D8112	1992-2001	2020-2029

FIRE ALARM MASTER PLAN

Site Name	Site Address	Panel Type	Age Range	Replacement Years (Range)
Urban Montessori @ Sherman Charter	5328 Brann St 94619	4020 D9412GV2	1992-2001	2020-2029
Webster CDC	7980 Plymouth St 94621	4005 Bosch D9412GV4	1992-2001	2020-2029
Acorn/Woodland/Encompass	1025 81st Ave 94621	4100U (4) 4009 Bosch D9412G	2001-2014	2025-2034
Arts/Far West	5263 Broadway Terrace 94618	4100U (4) 4009	2001-2014	2025-2034
Ascend Charter	3709 E 12th St 94601	4100U 4009 Bosch 9412GV4	2001-2014	2025-2034
Bret Harte MS	3700 Coolidge Ave 94602	4100U 9412GV2 (9) 4009	2001-2014	2025-2034
Bridges Academy @ Melrose	1325 53rd Ave 94601	4100U (3) 4009 (2) D9412GV2	2001-2014	2025-2034
Burckhalter ES	3994 Burckhalter Ave 94605	4100U (2) 4009 Bosch D9412G	2001-2014	2025-2034
Castlemont HS	8601 MacArthur Boulevard 94605	4100U (10) 4009 Bosch D9412G Bosch D9412GV2	2001-2014	2025-2034
Chabot ES	6686 Chabot Rd 94618	4100U (5) 4009 D9412GV2	2001-2014	2025-2034
Cleveland ES	745 Cleveland St 94606	4100U (3) 4009 Bosch D9412GV2	2001-2014	2025-2034
Crocker Highlands ES & CDC	525 Midcrest Rd 94610	4100U Bosch D9412G (2) Bosch D8112 (CDC)	2001-2014	2025-2034
Education for Change/Reach Academy @ Cox ES	9860 Sunnyside St 94603	4100U (10) 4009 (2) Bosch D9412GV5	2001-2014	2025-2034
Emerson/Emerson CDC	4803 Lawton Ave 94601	4100U (6) 4009 (2) Bosch D7212	2001-2014	2025-2034
Fremont HS	4610 Foothill Blvd 94601	4100U (5) 4009 Bosch D9412	2020	2035-2040
Global Family Living & Learning without Limits @ Jefferson ES	2035 40th Ave 94601	4100U (4) 4009 Bosch D9412GV2	2001-2014	2025-2034
Highland Academy (Rise)	8521 A St 94621	4100U (10) 4009 Bosch D9412GV4	2001-2014	2025-2034
Hillcrest ES	30 Marguerite Dr 94618	4100U (2) 4009 D9412G	2001-2014	2025-2034
Hoover ES	890 Brockhurst St 94608	4100U (6) 4009 Bosch D9412GV2	2001-2014	2025-2034
Horace Mann ES	5222 Ygnacio Ave 94601	4100U 4009 Bosch 9412G	2001-2014	2025-2034

FIRE ALARM MASTER PLAN

Site Name	Site Address	Panel Type	Age Range	Replacement Years (Range)
Lincoln ES	225 11th St 94607	4100U (4) 4009 Bosch D9412GV2	2001-2014	2025-2034
Madison MS	400 Capistrano Dr 94603	4100U (7) 4009 Bosch D9412GV4	2001-2014	2025-2034
Manzanita ES	2409 E 27th St 94601	4100U (4) 4009 D9412GV2	2001-2014	2025-2034
Martin Luther King ES/CDC	960 10th St. 94607	4100U 4009 D8112	2001-2014	2025-2034
Montera MS	5555 Ascot Dr 94611	4100U (6) 4009 D8112	2001-2014	2025-2034
Oakland High	1023 MacArthur Blvd 94610	4100U (12) TAC Panels Bosch D9412GV2	2001-2014	2025-2034
Oakland International High School @ Carter	4521 Webster St 94609	4100U (5) 4009 D9412 D9412GV2	2001-2014	2025-2034
Oakland Technical HS	4351 Broadway 94611	(2) 4100U (17) 4009 (2) Bosch D9412G	2001-2014	2025-2034
Parker ES/CDC	7929 Ney Ave 94605	4100U (3) 4009 Bosch Panel	2001-2014	2025-2034
Place @ Prescott ES	920 Campbell St 94607	4100U (3) 4009 Bosch D9412GV4	2001-2014	2025-2034
Ralph Bunche HS	1240 18th St. 94607	4100U (2) 4009 Bosch D9412GV2	2001-2014	2025-2034
Redwood Heights ES	4401 39th Ave 94619	4100U (3) 4009 Bosch Dialer	2001-2014	2025-2034
Roosevelt MS	1926 19th Ave. 94606	4100U (9) 4009 Bosch D9412GV2	2001-2014	2025-2034
Roots International @ Havenscourt	1390 66th Ave 94621	4100U (4) 4009 Bosch D9412GV2	2001-2014	2025-2034
Roses in Concrete/John Swett School (Lower) **	4551 Steele St 94619	4100U Bosch D9412GV2	2001-2014	2025-2034
Roses in Concrete/Tilden Education Ctr - John Swett (Upper) **	4551 Steele St 94619	4100U Bosch D9412GV2	2001-2014	2025-2034
Stonehurst CDC	901 105th Ave 94603	4100ES Bosch D9412GV4 Wheelock PS-8	2001-2014	2025-2034
Think College Now @ Chavez	2825 International Blvd 94601	4100U (10) 4009 (1-CDC) Bosch D9412GV2 Bosch D9412G	2001-2014	2025-2034
United For Success @ Calvin Simmons	2101 35th Ave 94601	4100U (8?) 4009 Bosch D9412	2001-2014	2025-2034

FIRE ALARM MASTER PLAN

Site Name	Site Address	Panel Type	Age Range	Replacement Years (Range)
Urban Promise Academy	3031 E. 18th Street 94601	4100U (3) 4009 Bosch D9412G	2001-2014	2025-2034
West Oakland MS/Lafayette	991 14th Ave 94607	4100U (6) 4009 D9412GV2	2001-2014	2025-2034
West Oakland/Kipp Bridge	991 14th Ave	4100U (6) 4009 D9412GV2	2001-2014	2025-2034
Westlake MS	2629 Harrison St 94612	4100U (5) 4009 Radionics D9412G	2001-2014	2025-2034
Allendale ES	3670 Penniman Ave 94619	4100ES 4009 D9512	2010-2022	2030-2039
Bella Vista ES	1025 E 28th St 94610	4100ES (4) 4009 Bosch D9412GV4	2010-2022	2030-2039
Berkeley Maynard	6200 San Pablo Avenue 94608	4100ES Bosch 9412GV2 PowerPath Portable 93	2010-2022	2030-2039
Burbank PreSchool	3550 64th Ave 94605	4100ES	2010-2022	2030-2039
Centro Infantil CDC	2660 E 16th St 94601	4100ES Bosch D8112	2010-2022	2030-2039
Cole MS (OUSD Police/SPED)	1011 Union St 94607	4100ES (2) D9412GV2 PS-8	2010-2022	2030-2039
Edna Brewer MS	3748 13th Ave 94610	4100ES	2010-2022	2030-2039
Elmhurst MS (Alliance Academy)	1800 98th Ave 94603	4100ES (7) 4009 Bosch (D9412GV4?)	2010-2022	2030-2039
Esparanza @ Stonehurst ES/Fred T. Korematsu	10315 E St 94603	4100ES (4) 4009 Bosch D9412	2010-2022	2030-2039
Frick MS	2845 64th Ave 94605	4100ES 4100U (2) 4009 Bosch D9412GV4	2010-2022	2030-2039
Henry J Kaiser ES	25 S Hill Ct 94618	4100ES 4009 Bosch	2010-2022	2030-2039
Howard ES	8755 Fontaine St 94605	4100ES 4003 Bosch D9412GV4	2010-2022	2030-2039
Joaquin Miller ES	5525 Ascot Dr 94611	4100ES	2010-2022	2030-2039
La Escuelita ES/CDC - Done with MetWest HS (one city block)	1050 2nd Ave 94606	4100ES (5) 4009 Bosch D9412GV4	2010-2022	2030-2039
Lafayette ES/KIPP Bridge Academy	1700 Market St 94607	4100ES (3) NAC (1) Bosch Dialer	2010-2022	2030-2039
Laurel ES	3750 Brown Ave 94619	4100ES (2) 4009 D9412GV4	2010-2022	2030-2039
Lazear ES	824 29th Ave 94601	4100ES Bosch	2010-2022	2030-2039

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Site Name	Site Address	Panel Type	Age Range	Replacement Years (Range)
Markham ES	7220 Krause Ave 94605	4100ES (2) 4009 Bosch D8112	2010-2022	2030-2039
McClymonds Community HS	2607 Myrtle St 94607	4100ES (15?) 4009 Bosch D9412G	2010-2022	2030-2039
Montclair ES	1757 Mountain Blvd 94611	4100ES (5) 4009 D9412GV4	2010-2022	2030-2039
Oakland Technical HS	4351 Broadway 94611	(2) 4100U (17) 4009 (2) Bosch D9412G	2010-2022	2030-2039
OUSD Warehouse	900 High Street 94601	4100ES	2010-2022	2030-2039
Peralta/Peralta CDC	460 63rd St 94609	4100ES (2) 4009 Bosch D9412GV2 Bosch D9412	2010-2022	2030-2039
Piedmont ES (3 panels) (Schedule with Piedmont CDC)	4314 Piedmont Ave 94611	4100ES (3) TAC Bosch D9412GV4	2010-2022	2030-2039
Sankofa ES @ Washington	581 61st St 94609	4100ES (3) 4009 D9412GV2	2010-2022	2030-2039
Skyline HS	12250 Skyline Blvd 94619	(3) 4100ES (3) Transponders 4009 Radionics or Bosch Dialer?	2010-2022	2030-2039
Sobranite Park ES	470 El Paseo Dr 94603	4100ES 4009 Bosch D9412GV2	2010-2022	2030-2039
Stonehurst CDC (perform with Stonehurst ES)	901 105th Ave 94603	4100ES Bosch D9412GV4 Wheelock PS-8	2010-2022	2030-2039
Thornhill ES	5880 Thornhill Dr 94611	4100ES 4009 Bosch D8112	2010-2022	2030-2039
Whittier ES (Greenleaf ES)	6328 E 17th St 94621	(2) 4100ES (1) XPNDR	2010-2022	2030-2039
Youth Empowerment-King Estates	8251 Fontaine St 94605	4100ES (6) 4009 Bosch D9412GV2 Boach D9412GV4	2010-2022	2030-2039
ACOE @ Neighborhood Center	750 International Blvd 94606	Bosch D9412GV4		2020-2035
Arroyo Viejo CDC	1895 78th Ave 94621	Bosch D9412GV4 Wheelock PS-8 Altronix AL400ULPD4		2020-2035
Bella Vista CDC	2410 10th Ave 94606	Bosch D9124 Wheelock PS-12/24-8MP		2020-2035
Community Day Middle/High	4917 Mountain Blvd 94619	D9124 D9412GV2 D9124F (2) PS/24-8CP		2020-2035
Family Community Center/Community School for Creative Education	2111 International Blvd 94606	Edwards EST2 Edwards IRC3		2020-2035
Golden Gate CDC	6232 Herzog St 94608	Autocall DD Bosch D8112		2020-2035


FIRE ALARM MASTER PLAN

Site Name	Site Address	Panel Type	Age Range	Replacement Years (Range)
Harriet Tubman	800 33rd St 94608	Bosch 9412GV2 PS-8		2020-2035
Highland CDC	1322 86th Ave 94621	Bosch D9412CV2 Bosch D8109 Wheelock PS-8 Atronix AL400ULXR		2020-2035
Hillside Academy	2369 84th Street 94605	Bosch D9124		2020-2035
Hintil Kuu Ca CDC	11850 Campus Dr 94619	Notifier 4812S Autocall DD Bosch D8112		2020-2035
Jefferson CDC	1975 40th Ave 94601	Bosch D9412GV4 Wheelock PS-8 Altronix AL400ULXR		2020-2035
Laurel CDC	3825 California St 94619	Notifier 4812 Bosch D8112		2020-2035
Lockwood CDC	1125 69th Ave 94621	Bosch D9412GV5 Wheelock PS-8		2020-2035
Lockwood ES (Futures/Community)	6701 International Blvd 94621	Bosch D9412GV4 Wheelock PS-8		2020-2035
Manzanita CDC	2618 Grande Vista Ave. 94601	Bosch		2020-2035
Piedmont CDC (schedule with Piedmont ES)	86 Echo Ave 94611	Bosch 9412GV4 Wheelock PS-8 Altronix AL400LXR		2020-2035
Washington CDC	6097 Racine Street 94609	Autocall Bosch D9412G		2020-2035
Webster CDC	7980 Plymouth St 94621	4005 Bosch D9412GV4		2020-2035
Yuk Yau CDC	291 10th St 94607	Bosch D9412GV2 Wheelock PS-8		2020-2035



11/14/19

Aimee Eng
President, Board of Education



11/14/19

Kyla Johnson-Trammell
Secretary, Board of Education