

LEGISLATIVE FILE

File ID No. 13-2835  
Introduction Date 1-15-2014  
Enactment No. \_\_\_\_\_  
Enactment Date \_\_\_\_\_  
By \_\_\_\_\_

OAKLAND UNIFIED SCHOOL DISTRICT  
OFFICE OF THE SUPERINTENDENT  
January 8, 2014

TO: Board of Education

FROM: Dr. Gary Yee, Ed.D., Acting Superintendent and Secretary, Board of Education  
By: Vernon Hal, Deputy Superintendent  
Timothy White, Associate Superintendent for Facilities Planning and Management

SUBJECT: Request for Approval of Memorandum of Understanding – Alameda County Office of Education's Leadership in Energy Efficiency Program (ACOE-LEEP) and Oakland Unified School District (OUSD)

**MEMORANDUM OF UNDERSTANDING**

**PARTIES:** This Memorandum of Understanding (M.O.U.) is entered into between the Alameda County Office of Education's Leadership in Energy Efficiency Program (ACOE-LEEP) and Oakland Unified School District (OUSD).

**PURPOSE:** The purpose of this M.O.U. is to enable the ACOE-LEEP to receive a share of the energy, water, and accounting savings as a result of ACOE-LEEP's efficiency work and other cost saving measures on behalf of OUSD.

**TERM:** This M.O.U. shall become effective upon the date of execution by both the parties and shall continue for a period of five (5) years, or until December 31, 2018.

**SCOPE OF SERVICES:**

A. ACOE-LEEP shall provide energy and water efficiency services for Oakland as follows:

1. Confirm benchmark work by Kyoto/USA of OUSD's approximately 93 facilities on the Environmental Protection Agency's Portfolio Manager (Portfolio Manager);
2. Bill analysis of energy and water usage;
3. Recommendations to improve accounts payable and receivables for utility charges

4. Energy audits at 5 sites within Oakland Unified School District boundaries: a) Oakland High School, b) Castlemont High School, c) Oakland Tech High School, d) Skyline High School, and e) Fremont High School (cost of audit paid by OUSD).
5. In the event OUSD wishes to have an energy audit conducted at another site, LEEP staff will attempt to locate an audit program that is free or at significantly reduced costs, is appropriate, and likely to achieve cost savings. In the event any audit cost money, LEEP shall obtain OUSD's consent prior to undertaking such audit.
6. Water audits at 5 sites: a) Oakland High School, b) Castlemont High School, c) Oakland Tech High School, d) Skyline High School, and e) Fremont High School.
7. Provide LEEP high school internship opportunities to students enrolled in CA Partnership Academies. These activities may include presentation(s) by LEEP's engineering companies, sharing and evaluating audits with students, having students select projects to implement in coordination with the Facilities Dept., principals, and other OUSD staff, evaluating efficiency projects after implementation, etc.
8. Assist OUSD in executing audits

#### COST SHARING:

In exchange for the work provided by ACOE-LEEP and as defined in Scope of Services, OUSD and ACOE-LEEP shall share any savings achieved by ACOE-LEEP on OUSD's behalf as follows:

OUSD will provide twenty-five percent (25%) of its savings to ACOE-LEEP for a five (5) year period after the savings are realized at the five (5) sites named under Scope of Services (Line Item A4). ACOE-LEEP will confirm benchmarked data on OUSD's approximately 93 sites on Portfolio Manager. The data provides the energy consumption by OUSD at each site. For larger sites (with a usage of 200 kWh/year) Pacific Gas & Electric (PG&E) has automated the data uploaded on Portfolio Manager. Once the facilities are agreed upon by ACOE-LEEP and OUSD, a benchmark shall be established as to the consumption of energy/water (i.e., electricity (kWh/year), natural gas (therms/year), or water/sewage (gallons/year)).

After efficiency measures or other actions are completed by ACOE-LEEP (including bill rate changes, cancelled unused meters, etc.) a confirmation will be made that those savings are indeed realized by OUSD. An accounting true-up will be presented to OUSD by ACOE-LEEP, with a request for payment. ACOE-LEEP will provide as much detail to the invoice as may be reasonably requested by OUSD.

By way of example, if a rate change causes PG&E to change its billing to OUSD from \$5,000/month to \$3,000/month, then the savings realized by OUSD is \$2,000/month (\$5,000-\$3,000 = \$2,000). ACOE-LEEP will be paid \$500/month (\$2,000\*25% = \$500).

Or, if an energy efficiency measure is executed to reduce HVAC usage in a school, Portfolio Manager will show a reduction of energy usage (in kWh over a period of time). A reduction in energy usage will then be reflected in OUSD's energy bills. If the energy bill was 700 kWh/mo before the energy measure was executed and 500 kWh/mo after, the difference will be 200 kWh/mo (700 kWh/mo – 500 kWh/mo = 200 kWh/mo). OUSD would pay ACOE-LEEP 25% of

the 200 kWh/mo at the then going rate for electricity. If the blended average electricity rate from PG&E is \$.15/kWh, then the amount paid to ACOE-LEEP is \$7.50/mo (200 kWh \* \$.15/kWh \* 25% = \$7.50). Because there is a summer and winter rate for energy, ACOE-LEEP will use a blended average rate for ease of calculation. It is not the intent of ACOE-LEEP to guarantee electricity, natural gas, or water rates for OUSD, so the calculations are based on units of energy and water saved multiplied by the then current rates from the utility companies.

Or, if a water measure is executed to reduce water usage in a school, a benchmark will be established by OUSD and ACOE-LEEP. After the water efficiency project is completed and is reflected in OUSD's water and sewage bills, a similar reconciliation will be made.

#### **INDEMNIFICATION:**

- A. Insofar as permitted by law, ACOE shall assume the defense and hold harmless OUSD and/or any of its officers, agents or employees from any liability, damages, costs, or expenses of any kind whatsoever, including reasonable attorneys' fees, which may arise by reason of the sole fault or negligence of ACOE, its officer, agents or employees.
- B. Insofar as permitted by law, OUSD shall assume the defense and hold harmless ACOE and/or any of its officers, agents or employees from any liability, damages, costs, or expenses of any kind whatsoever, including reasonable attorneys' fees, which may arise by reason of any harm to person(s) or property received or suffered by reason of the sole fault or negligence of OUSD, its officers, agents or employees.
- C. It is the intent of the ACOE and OUSD that where negligence or responsibility for any harm to person(s) or property is determined to have been shared, the principles of comparative negligence shall be followed and each party shall bear the proportionate cost of any liability, damages, costs, or expenses attributable to that party.
- D. ACOE and OUSD agree to notify the other party of any claims, administrative actions, or civil actions determined to be within the scope of this Agreement within ten (10) calendar days of such determination. ACOE and OUSD further agree to cooperate in the defense of any such actions. Nothing in this Agreement shall establish a standard of care for or create any legal right for any person not a party to this Agreement.

**NON-DISCRIMINATION:** It is the policy of ACOE that in connection with all work performed under Contracts there be no discrimination against any employee engaged in the work because of race, color, ancestry, national origin, or religious creed, and therefore ACOE, OUSD and any contractor hired to complete work at OUSD, agrees to comply with applicable Federal and California laws including, but not limited to the California Fair Employment Practice Act beginning with Government Code Section 12900 and Labor Code Section 1735.

#### **TERMINATION/SUSPENSION:**

This M.O.U. may be terminated without cause by either party upon thirty (30) days prior written notice to the other party. When required by law, this M.O.U. may be immediately suspended by either party upon notice to the other party; any such suspension shall not extend the term of this M.O.U. In the event of a termination of this agreement, ACOE-LEEP shall provide an accounting reconciliation of savings achieved to the date of the termination, including a net

present value (NPV) calculation of the future expected savings of work completed as of the date of the termination, using an interest rate of three per cent (3%). OUSD shall pay the amount outstanding as of the date of the termination.

**NOTICES:**

Any notice required to be given by the terms of this M.O.U. shall be deemed to have been given when the same is personally delivered or sent by first class mail, postage prepaid, addressed to the respective parties as follows:

To ACOE: Yvonne Tom, Program Manager I, Energy Efficiency  
Alameda County Office of Education  
Leadership in Energy Efficiency Program  
313 W. Winton Avenue  
Hayward, CA 94544  
510-670-4237; 510-670-5132 (fax)  
[ytom@acoe.org](mailto:ytom@acoe.org)

To OUSD: Tadashi Nakadegawa, Director of Facilities  
Oakland Unified School District  
955 High St.  
Oakland, CA 94601  
510-879-2862; 510-535-7040 (fax)  
[Tadashi.nakadegawa@ousd.k12.ca.us](mailto:Tadashi.nakadegawa@ousd.k12.ca.us)  
Cc: Cesar Monterrosa, Facilities Coordinator

**INTEGRATION:**

This M.O.U. represents the entire and integrate agreement between ACOE and OUSD, and supersedes all prior negotiations, representations, or agreements, either written or oral. This M.O.U. may be amended only by written instrument signed by the duly authorized representatives of ACOE and OUSD.



**REPRESENTATION OF AUTHORITY:**

The undersigned hereby represent and warrant that they are authorized by the respective parties to execute this M.O.U.

IN WITNESS WHEREOF, ACOE and OUSD have executed this M.O.U. as of the date first below written.

**ALAMEDA COUNTY  
OFFICE OF EDUCATION**

\_\_\_\_\_  
Alicia Masri  
Director, Maintenance & Operations

Date: \_\_\_\_\_

\_\_\_\_\_  
Damon Smith, Associate Superintendent

Date: \_\_\_\_\_

**OAKLAND UNIFIED SCHOOL DISTRICT**



\_\_\_\_\_  
Timothy E. White  
Associate Superintendent, Facilities Planning and  
Management

Date: \_\_\_\_\_

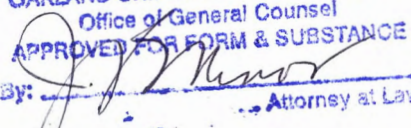
\_\_\_\_\_  
Vernon Hal, Deputy Superintendent, Business  
Services and Operations

Date: \_\_\_\_\_

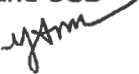
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Dr. Gary Yee, Ed.D. Acting Superintendent

Date: \_\_\_\_\_

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OAKLAND UNIFIED SCHOOL DISTRICT  
Office of General Counsel  
APPROVED FOR FORM & SUBSTANCE  
BY:   
Attorney at Law

Memo To: T. Nakadegawa, Director Facilities, Oakland USD  
C. Monterosa, Facilities Coordinator, Oakland USD

From: Y. Tom, Program Manager I/LEEP/ACOE 

Date: 3/1/13

RE: Gym Lighting Retrofit Project for Oakland High  
Delamping Project for Fremont High

Cc: P. Ananta, Program Manager, Mechanical Engineer/LEEP/ACOE  
A. Masri, Director of Facilities and Operations/ACOE

### **Executive Summary**

Approval is requested for \$13,760 to replace metal halide lamps in the gym with high efficiency T-5 fluorescent fixtures at Oakland High School and to delamp overlit classrooms and hallways at Fremont High School. These energy efficiency measures were selected because they are teaching opportunities for students in their respective California Partnership Academies ("Green Academies").

School	Measure	Peak Demand (Kw)	Electricity (kWh/yr)	CO2 emissions (lbs/yr)	Cost saved (\$/yr)	Cost to execute (\$)	Potential Incentives (\$)	Net Cost (Cost – Incentives)	Payback (Net cost/Cost saved) (yr)
Oakland HS	Gym light replacement	4.3	13,897	7,282	\$1,807	\$9,505	\$695	\$8,810	4.9
Fremont HS	Class & hall delamping <sup>(1)</sup>	24.0	55,200	73,692	\$7,496	\$4,950		\$4,950	0.7
Totals		28.3	69,097	80,974	\$9,303	\$14,455	\$695	\$13,760	1.5

Data from: kW Engineering, audit reports dated Jan 25, 2013, p. 4 and Jan 24, 2013, p.6. *Specific Note (1):* this project should be done in stages, such as hallways first. The students can see visual differences, and proceed with the rest of the spaces based on their initial work and comments from teachers, staff, Facilities Dept., and students.

### **General Discussion**

LEEP and kW Engineering conducted five energy audits (ASHRAE level II) at Oakland High, Castlemont, Skyline, Oakland Tech, and Fremont High. These sites were selected because they had Green Academies and LEEP's goal is to not only save energy for school districts but to present learning opportunities for students.

The energy audits contain many efficiency measures that can reduce energy usage at these two schools (see Appendix A). However, lighting measures with low paybacks and that can be easily taught to high school students were selected. Oakland High students are led by Katie Noonan with 13 LEEP senior high school interns. These students complete specific tasks outlined by Puck Ananta, LEEP's licensed mechanical engineer, in conjunction with Ms. Noonan (see Appendix B).

Mr. Phong Hoang is the instructor of sophomore students at Fremont High. The tasks may be modified based on input from the teacher and his curriculum. It is recommended in the Fremont delamping project that certain hallway sections of the school be delamped first, evaluations made, input received from staff, students, teachers, and the Facilities Dept. and modifications made accordingly. Subsequent delamping can then occur at other areas in the school based on the initial pilot project. Finally, with fewer lamps there will be lower on-going maintenance costs (for lamps and maintenance staff time).

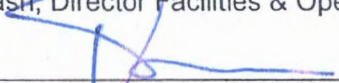
A typical recommendation for hallways is 20 foot candles/square foot (fc/sf) and classrooms is 30 fc/sf. As education moves to a more computer-driven environment and less "paper and pencil," we need to provide light that reduces glare yet provides adequate light for paper and pencil activities.

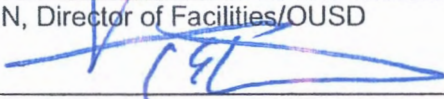
Based on the results at the two school sites, LEEP will proceed with the remaining three high schools in the Fall semester of 2013.

In order for LEEP to be an on-going sustainable program at Alameda County Office of Education, we are requesting a 25% share of the energy savings, or \$2,235/yr over some average number of years. The years will vary due to the fact that Fremont High will be renovated and will only account for the number of years the delamping measures are in effect. The work at Oakland High will be based on five years. Of the 25% share, 20% will provide for LEEP overhead and 5% will be added to a revolving loan fund that school districts may borrow for short periods to execute future efficiency projects. This will cover our time to work with students, oversee the measures, apply for rebates, do measurements and verifications after the work is completed, and provide any other services. A separate memorandum of understanding will be executed to memorialize this aspect of the recommendation.

**Approvals:**

  
\_\_\_\_\_  
Alicia Masri, Director Facilities & Operations/ACOE

  
\_\_\_\_\_  
Tadash N, Director of Facilities/OUSD

  
\_\_\_\_\_  
Tim White, Assistant Superintendent/OUSD

3/2/13  
\_\_\_\_\_  
Date

8/15/13  
\_\_\_\_\_  
Date

8/16  
\_\_\_\_\_  
Date

Oakland High School  
1023 MacArthur Boulevard Oakland, CA  
Measure Summary

		Annual Savings						Costs and Payback				
		Peak Savings (kW)	Electricity Savings (kWh/yr)	Gas Savings (therms/yr)	Total Cost Savings (\$/yr)	Savings As % Of Annual Electric Bill	Emissions Reduction (lbs CO2/yr)	Measure Cost	Potential Incentive	Net Measure Cost	Estimated Payback After Incentive (yr)	NPV (\$)
LCM-1	Install High-Efficiency Mini-Split Air Conditioner	0.1	1,064	0	\$ 138	0.1%	557	\$ 1,980	\$ 96	\$ 1,884	13.6	\$ (443)
LCM-2	Install Daylighting Controls in Circulation Areas with Sufficient Daylight, Multi-Purpose Room	0.0	7,507	0	\$ 976	0.5%	3,934	\$ 8,700	\$ 375	\$ 8,325	8.5	\$ (150)
LCM-3	Replace Hi-Bay Metal Halide Lighting in Gym with T5 High Output Fluorescent Fixtures	4.3	13,897	0	\$ 1,807	0.9%	7,282	\$ 9,505	\$ 695	\$ 8,810	4.9	\$ 10,583
CIM-1	Implement Computer Power Management Software on All PCs	3.4	118,848	0	\$ 15,450	8.0%	62,277	\$ 15,600	\$ 7,800	\$ 7,800	0.5	\$ 40,483
CIM-2	Replace Exterior Fixture Lamps and Ballasts with Induction Lamps and Ballasts	0.0	29,258	0	\$ 3,804	2.0%	15,331	\$ 12,138	\$ 1,483	\$ 10,655	2.8	\$ 30,154
CIM-3	Implement a Retro-Commissioning Project for the Main Building HVAC Systems	32.7	171,887	2,671	\$ 22,345	11.5%	125,984	\$ 74,400	\$ 18,141	\$ 56,259	2.5	\$ 148,732
TOTAL		40.5	342,462	2,671	\$ 44,520	23.0%	215,365	\$ 122,321	\$ 28,570	\$ 93,751	2.1	\$ 229,358

(continued on next page)



## 1.1 Your Cost Reduction Opportunities

The following tables summarize the measures that we recommend for this site.

		Annual Savings						Costs and Payback				
		Peak Savings (kW)	Electricity Savings (kWh/yr)	Gas Savings (therms/yr)	Total Cost Savings (\$/yr)	Savings As % Of Annual Utility Bill	Emissions Reduction (lbs CO2/yr)	Measure Cost	Potential Incentive	Net Measure Cost	Estimated Payback After Incentive (yr)	NPV (\$)
LCM-1	Kitchen Walk-In Cooler: Install Strip Curtains and Electronically Commutated Motors on Evaporator Fans	0.2	2,204	0	\$ 299	0.2%	2,942	\$ 1,293	\$ 200	\$ 1,093	3.7	\$1,329
LCM-2	Desktop Computers: Install Network Power Management Software	0.0	27,830	0	\$ 3,779	2.1%	37,153	\$ 5,850	\$ 2,250	\$ 3,600	1.0	\$9,267
LCM-3	Fix Broken Photocells Controlling Exterior Lights	0.0	3,884	0	\$ 527	0.3%	5,185	\$ 330	\$ -	\$ 330	0.6	\$3,221
LCM-4	Install Occupancy Sensors in Bathrooms	0.0	6,542	0	\$ 888	0.5%	8,733	\$ 3,859	\$ 490	\$ 3,369	3.8	\$3,249
LCM-5	Delamp Fixtures in Overlit Classrooms and Hallway Areas	24.0	55,200	0	\$ 7,496	4.1%	73,892	\$ 4,950	\$ -	\$ 4,950	0.7	\$78,395
LCM-6	Replace Auditorium Halogen Lamps with CFLs	1.2	1,616	0	\$ 219	0.1%	2,157	\$ 284	\$ -	\$ 284	1.2	\$3,027
CIM-1	Replace Magnetic Ballasts and T12 Lamps with Electronic Ballasts and T8 Lamps	4.7	10,221	0	\$ 1,388	0.8%	13,645	\$ 11,354	\$ -	\$ 11,354	8.2	\$9,467
CIM-2	Upgrade Exterior Lighting to Bi-level Induction Fixtures	0.0	30,062	0	\$ 4,082	2.2%	40,133	\$ 38,916	\$ 2,765	\$ 36,151	8.9	\$8,474
<b>Totals for Recommended Measures</b>		<b>30.1</b>	<b>137,558</b>	<b>0</b>	<b>\$ 18,680</b>	<b>10.3%</b>	<b>143,645</b>	<b>\$ 66,815</b>	<b>\$ 5,705</b>	<b>\$ 61,110</b>	<b>3.3</b>	<b>\$ 103,832</b>

## Appendix B: Possible Student Intern Tasks

1. Project management team (track time and materials)
  - a. Create time schedule
  - b. Manage team assignments
  - c. Prepare construction schedule
  - d. Identify and apply for PG&E incentives
  - e. Prepare report for presentation
2. Engineering team
  - a. Study recommendation, explore options and alternatives
  - b. Field study including light level measurements
  - c. Identify different types of lighting options
  - d. Identify costs
  - e. Prepare savings calculations

Students will select which team they will participate in, subject to the teacher's approval. Tasks may be modified based on new findings, alternatives, and time to complete tasks. Students will also provide feedback to LEEP staff as to the effectiveness of the project and internship.

## MEMORANDUM OF UNDERSTANDING ROUTING FORM

### Project Information

<b>Project Name</b>	Alameda County Leadership in Energy Efficiency	<b>Site</b>	District Wide
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### Basic Directions

**Services cannot be provided until the contract is fully approved and a Purchase Order has been issued.**

<b>Attachment Checklist</b>	<input type="checkbox"/> Proof of general liability insurance, including certificates and endorsements, if contract is over \$15,000 <input type="checkbox"/> Workers compensation insurance certification, unless vendor is a sole provider
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### Contractor Information

Contractor Name	Alameda County of Education	Agency's Contact	Yvonne Tom				
OUSD Vendor ID #		Title	Program Manager I				
Street Address	313 W. Winton Avenue	City	Hayward	State	CA	Zip	94544
Telephone	510-670-4237	Policy Expires					
Contractor History	Previously been an OUSD contractor? <input type="checkbox"/> Yes <input type="checkbox"/> No		Worked as an OUSD employee? <input type="checkbox"/> Yes <input type="checkbox"/> No				
OUSD Project #	NA						

### Term

<b>Date Work Will Begin</b>	1-1-2014	<b>Date Work Will End By</b> (not more than 5 years from start date)	12-31-2018
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### Compensation

<b>Total Contract Amount</b>	\$	<b>Total Contract Not To Exceed</b>	\$
<b>Pay Rate Per Hour (If Hourly)</b>	\$	<b>If Amendment, Changed Amount</b>	\$
<b>Other Expenses</b>		<b>Requisition Number</b>	

### Budget Information

*If you are planning to multi-fund a contract using LEP funds, please contact the State and Federal Office before completing requisition.*

Resource #	Funding Source	Org Key	Object Code	Amount
	SEE MOU			

### Approval and Routing (in order of approval steps)

Services cannot be provided before the contract is fully approved and a Purchase Order is issued. Signing this document affirms that to your knowledge services were not provided before a PO was issued.

	Division Head	Phone	510-535-7038	Fax	510-535-7082
1.	Director, Facilities Planning and Management				
	Signature	Date Approved			
2.	General Counsel, Department of Facilities Planning and Management				
	Signature	Date Approved			
	Associate Superintendent, Facilities Planning and Management				
3.	Signature	Date Approved			
	Deputy Superintendent, Board of Education				
4.	Signature	Date Approved			
	President, Board of Education				
5.	Signature	Date Approved			