



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
July 26, 2023 Business Meeting
Backup Materials for Agenda Item No 03g:
The Regents of the University of California, on behalf of the Davis Campus**

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Contract Request Form
3. Scope of Work

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

**RESOLUTION: The Regents of the University of California, on behalf of the Davis
Campus (UCD)**

RESOLVED, that the State Energy Resources Conservation and Development Commission (CEC) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the CEC approves agreement 500-23-001 with the Regents of the University of California, on behalf of UCD, for up to \$1,519,202. UCD will provide technical assistance to the California Schools Healthy Air, Plumbing, and Efficiency (CalSHAPE) Program by reviewing Heating, Ventilation, and Air Conditioning (HVAC) Assessment Reports, conducting audits, and analyzing program data; and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the CEC held on July 26, 2023.

AYE:

NAY:

ABSENT:

ABSTAIN:

Dated:

Liza Lopez
Secretariat



CONTRACT REQUEST FORM (CRF)

A. New Agreement Number

IMPORTANT: New Agreement # to be completed by Contracts, Grants, and Loans Office.

New Agreement Number: 500-23-001

B. Division Information

1. Division Name: RREDI
2. Agreement Manager: Blake Campbell
3. MS-45
4. Phone Number: 916-908-9746

C. Recipient's Information

1. Recipient's Legal Name: The Regents of the University of California, on behalf of the Davis Campus
2. Federal ID Number: 94-6036494

D. Title of Project

Title of project: Technical Support and Assessment of Impacts of CalSHAPE

E. Term and Amount

1. Start Date: 10/01/2023
2. End Date: 12/31/2026
3. Amount: \$1,519,202.00

F. Business Meeting Information

1. Operational agreement to be approved by Executive Director? Yes
2. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
3. The Proposed Business Meeting Date: 07-26-23
4. Consent or Discussion? Consent
5. Business Meeting Presenter Name: Blake Campbell
6. Time Needed for Business Meeting: 0 minutes.
7. The email subscription topic is: California Schools Healthy Air, Plumbing, and Efficiency Program (CalSHAPE)

Agenda Item Subject and Description:

The Regents of the University of California, on behalf of the Davis Campus. Proposed resolution approving agreement 500-23-001 with the Regents of the University of California, on behalf of UCD, for up to \$1,519,202, and adopting staff's determination that this action is exempt from CEQA. UCD will provide technical assistance to the California Schools Healthy Air, Plumbing, and Efficiency (CalSHAPE) Program by reviewing Heating, Ventilation, and Air Conditioning (HVAC) Assessment Reports, conducting audits, and analyzing program data. (CalSHAPE Funding)
Contact: Blake Campbell

G. California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?

Yes

If yes, skip to question 2.



If no, complete the following (PRC 21065 and 14 CCR 15378) and explain why Agreement is not considered a "Project":

2. If Agreement is considered a "Project" under CEQA answer the following questions.

a) Agreement IS exempt?

Yes

Statutory Exemption?

No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?

No

If yes, list CCR section number(s) and separate each with a comma. If no, enter "None" and go to the next question.

CCR section number: None

Common Sense Exemption? 14 CCR 15061 (b) (3)

Yes

If yes, explain reason why Agreement is exempt under the above section. If no, enter "Not applicable" and go to the next section.

14 CCR 15061(b)(3) provides that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

This Agreement is for technical assistance provided to CalSHAPE to assist in verifying Local Educational Agencies HVAC assessment reports. The agreement will not cause a significant effect on the environment because it is only supplying CalSHAPE staff with technical support to assist in verifying HVAC assessment reports, conducting audits, and analyzing program data. None of the deliverables will have any significant effect on the environment.

b) Agreement IS NOT exempt.

IMPORTANT: consult with the legal office to determine next steps.

No

If yes, answer yes or no to all that applies. If no, list all as "no" and "None" as "yes".

Additional Documents	Applies
Initial Study	No
Negative Declaration	No



Mitigated Negative Declaration	No
Environmental Impact Report	No
Statement of Overriding Considerations	No
None	Yes

H. Subcontractors

List all Subcontractors listed in the Budget (s). Insert additional rows if needed. If no subcontractors to report, enter "No subcontractors to report" and "0" to funds. **Delete** any unused rows from the table

Subcontractor Legal Company Name	Budget
None	0

I. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter "No key partners to report." **Delete** any unused rows from the table.

Key Partner Legal Company Name
No key partners to report

J. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter "N/A" for "Not Applicable" and "0" to Amount. **Delete** any unused rows from the table.

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
SEEP	2023/2024	500.841	\$500,000.00
SEEP	2024/2025	500.841	\$500,000.00
SEEP	2025/2026	500.841	\$500,000.00
SEEP	2026/2027	500.841	\$19,202.00

TOTAL Amount: \$1,519,202.00

R&D Program Area: N/A

Explanation for "Other" selection: N/A

Reimbursement Contract #: N/A

Federal Agreement #: N/A

K. Contractor's Contact Information



1. Contractor's Administrator/Officer

Name: Theresa Pistochini

Address: 215 Sage Street, Suite 100

City, State, Zip: Davis, CA 95616

Phone: 530.752.3262

E-Mail: tepistochini@ucdavis.edu

2. Contractor's Project Manager

Name: Theresa Pistochini

Address: 215 Sage Street, Suite 100

City, State, Zip: Davis, CA 95616

Phone: 530.752.3262

E-Mail: tepistochini@ucdavis.edu

L. Selection Process Used

There are three types of selection process. List the one used for this CRF.

Selection Process	Additional Information
Competitive Solicitation #	Not Applicable
Non Competitive Bid (<i>Attach DGS-GSPD-09-007</i> https://www.dgs.ca.gov/PD/Forms)	Not applicable
Exempt	Yes, Other CA State Agency (UC)

M. Contractor Entity Type

Contractor Entity Type	Yes or No?
Private Company (<i>including non-profits</i>)	No
CA State Agency (<i>including UC and CSU</i>)	Yes
Government Entity (<i>i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state</i>)	No

N. Is Contractor a certified Small Business (SB), Micro Business (MB) or Disabled Veterans Business Enterprise (DVBE)?

The contractor is a certified: N/A.

O. Civil Service Considerations



- a. Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)? Yes
- b. Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER) No
- c. The Services Contracted: No

If no, go to the next question. If yes, which of the following applies to the contract? More than one can apply, list each answer choice, and separate them with a comma:

- are not available within civil service
- cannot be performed satisfactorily by civil service employee
- are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system

The following applies to the contract: are such of a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system

- d. The Services are of such an urgent, temporary, or occasional nature that the delay to implement under civil service would frustrate their very purpose?

Urgent & Temporary

Justification:

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P. Payment Method

1. Is the payment method Reimbursement, Advanced Payment, or Other?
Reimbursement.
If Other, explain: N/A.
2. If Reimbursement, is it in arrears based on Itemized Monthly, Itemized Quarterly, Flat Rate, or One-time?
Itemized Quarterly.

Q. Retention

Is Agreement subject to retention? No.

If Yes, Will retention be released prior to Agreement termination? N/A.

R. Justification of Rates

The maximum labor rates charged by Contractor for the contract team personnel are average or below average in the green building consulting industry for similar or identical job classifications.

S. Disabled Veteran Business Enterprise Program (DVBE)

Provide requested additional information.

1. Exempt (Interagency/Other Government Entity) Yes
2. Meets DVBE Requirements DVBE
Amount: \$ 0 DVBE %:
3. Is the Contractor Certified DVBE or Subcontracting with a DVBE? If subcontracting with a DVBE, provide the name of the DVBE company. If none applies, enter "Not Applicable".



Not Applicable.

4. Contractor selected through CMAS or MSA with no DVBE participation No
5. Requesting DVBE Exemption (attach CEC 95) No

T. Miscellaneous Agreement Information

1. Will there be Work Authorizations? No
2. Is the contractor providing confidential information? No
3. Is the contractor going to purchase equipment? No
4. What is the check frequency of the progress reports? Monthly, Quarterly, or Other? If Other, please provide explanation.

Quarterly

5. Will a final report be required? Yes
6. Is the Agreement, with amendments, longer than three years? If yes, why?

Yes, this contract is intended to last through the lifespan of the CalSHAPE program which runs through December 31st, 2026.

U. The following items should be attached to this CRF (as applicable)

List all items that should be attached to this CRF by entering "Yes" or "No".

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	DGS-GSPD-09-007, NCB Request	No
4	CEC 95, DVBE Exemption Request	No
5	Awardee CEQA Documentation	No
6	Resumes	Yes
7	CEC 105, Questionnaire for Identifying Conflicts	Yes

Approved By

Individuals who approve this form must enter their full name and approval date in the MS Word version.

Agreement Manager: Blake Campbell

Approval Date: 05/16/2023

Office Manager: Jonathan Fong

Approval Date: 05/16/2023

Deputy Director: Jonathan Fong on behalf of Armand Angulo

Approval Date: 06/01/2023

Exhibit A – Scope of Work

Project Summary & Scope of Work

☒ Contract

☐ Grant

Does this project include Research (as defined in the UTC)?

☒ Yes

☐ No

PI Name: Theresa Pistochini

Project Title: Technical Support and Assessment of Impacts of CalSHAPE

Project Summary/Abstract

The California Schools Healthy Air, Plumbing, and Efficiency (CalSHAPE) Ventilation Program provides grants to local educational agencies (LEAs) to assess, maintain, and repair heating, ventilation, and air conditioning (HVAC) systems in California schools. The program requires that a prescribed assessment and maintenance process is conducted on HVAC systems with the goals of improving indoor air quality (IAQ) in classrooms and reducing energy use at the schools. An HVAC Assessment Report is prepared as part of the grant, which includes the data collected during the assessment and maintenance process and is used to determine if minimum ventilation and filtration rate requirements are being met. This project aims to analyze the data received in HVAC Assessment Reports and conduct in person verification of the data to ensure that the prescribed process is being performed correctly and that the data is accurate. This project will result in the analyzed data being provided to the public in a clear and logical format.

GOALS/OBJECTIVES OF THE AGREEMENT

The goal of the project is to support the California Energy Commission's implementation of the CalSHAPE program through on-call technical support, development of guidelines for review of HVAC assessment reports, development of procedures for onsite verification of HVAC assessments, and complete a program impact assessment.

If Third-Party Confidential Information is to be provided by the State:

- ☐ Performance of the Scope of Work is anticipated to involve use of third-party Confidential Information and is subject to the terms of this Agreement; **OR**
- ☐ A separate CNDA between the University and third-party is required by the third-party and is incorporated in this Agreement as Exhibit A7, Third Party Confidential Information.

Scope of Work

Task 1 – General Project Tasks

The University shall:

- Attend a kick-off, progress review, and final meeting for this agreement.

- Prepare an updated Schedule of Deliverables based on the decision made in the kick-off meeting, if necessary.
- Submit quarterly progress reports and quarterly invoices.
- Prepare a final report for the agreement in accordance with a final report template provided by the California Energy Commission (CEC).

The CAM shall:

- Arrange a kick-off, progress review, and final meeting including scheduling the date and time.
- Provide an agenda to all potential meeting participants prior to the kick-off, progress review, and final meeting.
- Review the draft final report and provide written comments, if any, to the recipient.

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- An updated Schedule of Deliverables, if necessary
- Quarterly progress reports
- Quarterly invoices
- Final report (draft and final)

Task 2 – CalSHAPE Program Technical Support

The University shall provide technical support to the CalSHAPE program staff to answer questions related to program administration, implementation, and review of HVAC Assessment Reports on as-needed basis. With input from the CAM, develop process to respond to technical support inquiries from CalSHAPE Program staff. The HVAC Assessment Reports review will include the verification of outside air rates, air distribution, and filtration rates in accordance with current Title 24 standards.

Products

- **HVAC Assessment Report Validation Protocol** to verify minimum required outside air (OSA) and filtration rates.
- **HVAC Assessment Report Review Summaries** in the form of reports, emails, and conference calls as necessary.

Task 3 – Methods for Review of HVAC Assessment Reports

The University shall develop a reference guide to assist CalSHAPE program staff in reviewing the completeness of data submitted in the HVAC assessment reports, and determining if the data is consistent and within reasonable ranges. CEC will provide to the University access to the HVAC assessment reports and the data digitalized from the following HVAC assessment worksheets:

- HVAC Assessment Worksheet 1, Overview
- HVAC Assessment Worksheet 2, Filtration
- HVAC Assessment Worksheet 3, Ventilation Rate
- HVAC Assessment Worksheet 4, Economizer Operation
- HVAC Assessment Worksheet 5, DCV Operation
- HVAC Assessment Worksheet 6, Air Distribution and Building Pressure
- HVAC Assessment Worksheet 7, General Maintenance
- HVAC Assessment Worksheet 8, Operational Controls
- HVAC Assessment Worksheet 9, CO₂ Monitoring
- HVAC Assessment Worksheet 10, Limited or No Mechanical System

A reference guide describing each data field contained in the HVAC Assessment worksheets (along with reasonable values) will be developed. The recipient will identify the fields in each worksheet that are most critical to validate for the analysis of the program impact in Task 6.

Products

- **Review of HVAC Assessment Reference Guide** for evaluating HVAC assessment worksheets including for each field: description, reasonable values, and priority for validation.

Task 4 – Methods for In-Person Verification of HVAC Assessment Reports

The University shall develop a field protocol to assist CalSHAPE program staff in conducting in-person verification of the information reported in the HVAC assessment report. The procedure will be designed to be feasible with a half-day visit per site with assistance from a school facility staff for locating and accessing HVAC units. The University's engineering staff will accompany a CalSHAPE program staff member to a minimum of 10 sites, with the goal of training CalSHAPE staff to visit further sites if desired. It is anticipated that in-person verification will randomly sample HVAC systems from those onsite to verify that:

- HVAC system data matches details provided on worksheet 1.
- The installed filter MERV rating matches the details provided on worksheet 2. Document any noticeable deficiencies, such as air filters not meeting reported MERV specification, filters past service life, excessive filter bypass.
- The outdoor intake functionality is generally consistent with worksheet 3 and DCV (if present) is generally consistent with worksheet 5 (outdoor air flow rate will not be measured). Document any notable deficiencies.
- The economizer functionality (if applicable) is generally consistent with worksheet 4. Document any notable deficiencies.
- The CO₂ sensor(s) installed are generally consistent with worksheet 9.
 - As available, collect prior month of CO₂ data for analysis. Prior month data will be analyzed to estimate ventilation rates via CO₂ decay or other methods and compared to the measured ventilation rates reported in the HVAC assessment report.
 - Where possible, deploy calibrated reference CO₂ sensors to collect data during course of site visit for comparison to installed CO₂ sensors.

As part of this verification process, the University will also develop a set of questions for conducting a virtual interview with a school facility staff who is knowledgeable about their HVAC systems to gather additional information that may not be observable onsite.

Products

- **Site Visit Reference Guide** for conducting in-person verification of HVAC assessment reports including verification procedures.
- **Site Visit Report** documenting findings for the sites that the recipient visited with CalSHAPE program staff.

Task 5 – Participant Survey

The University shall prepare, administer, and analyze the results of the following participant online surveys:

- Administration survey: The applicants to the CalSHAPE program will be surveyed to request information on their opinion on the program implementation, benefits of the program, HVAC improvements undertaken as a result of the program, and future needs for HVAC improvements.
- Teacher survey: The applicants to the CalSHAPE program will be asked to circulate a survey to teachers at sites where HVAC assessments occurred. The teacher survey will

collect information on the teacher's general satisfaction with indoor air quality and thermal comfort, their experience with the CO₂ monitor, and whether they have access to and use a portable air cleaner in their classroom.

Products

- **Participant Survey Report** summarizing the findings from the administration survey and the teacher survey.

Task 6 – Analysis of Program Impact

The University shall analyze specific data from the CalSHAPE database (validated by CalSHAPE program staff in Task 3) to determine the following summary statistics on assessed HVAC systems:

- General HVAC properties (capacity, refrigerant type, floor area served, year of building construction)
- As-found outdoor air rates (total and per-person)
- As-left outdoor air rates (total and per-person)
- Increase/decrease in outdoor air rates (total and per-person)
- As-found filter MERV ratings
- As-left filter MERV ratings
- Increase in filter MERV ratings
- Presence of economizer and/or DCV and their as-found and as-left functionality
- Quantity of CO₂ sensors installed by make/model
- Common HVAC system deficiencies identified

Data will be summarized for schools by location, education levels of the community, disadvantaged community status, and other relevant factors.

Aggregate CalSHAPE program impacts will then be estimated as follows:

- An EnergyPlus model of a typical classroom will be simulated in all California climate zones to estimate aggregate energy impacts of changes in ventilation rate, filtration upgrade, and repair of economizers.
- A particle filtration model of a typical classroom will be simulated to estimate aggregate impacts to particulate matter exposure (and associated health impacts) to occupants of the classroom.
- Ventilation and filtration metrics will be combined to estimate an equivalent air changes per hour (ACH) for removal of indoor generated respiratory aerosols and potential reduction in infection risk.
- Potential benefits from increase in outdoor air on student health and learning will be assessed using relationships reported from literature.
- To the extent possible, perform a statistical analysis to identify potential correlation between ventilation and filtration levels and attendance using data from the California Department of Education for the assessed schools.
- To the extent possible, perform a statistical analysis to identify potential correlation between ventilation and filtration levels and teacher perception of air quality and thermal comfort using data from the teacher survey in Task 5.

Products

- **Analysis of Program Impact Report (Final Report)** including summary of HVAC system characteristics and estimated impacts of the program on energy consumption, indoor particulate matter exposure, infection risk, health and learning, and teacher satisfaction. This report will also serve as the final report of the agreement.

Task 7 – CalSHAPE Annual Reports

The University will assist with analyzing data, developing statistics, and creating graphs and charts to be included in the CalSHAPE Annual Report.

Products

- **Annual Report Statistics, Graphs and Charts** to be used by CalSHAPE program staff in annual report publication.