



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

A) New Agreement # ARV-21-018 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Akasha Kaur Khalsa	27	916-891-9128

C) Recipient's Legal Name	Federal ID #
The Regents of the University of California, Irvine	95-2226406

D) Title of Project
A Replicable Zero-Emission Blueprint for Medium-and Heavy-Duty Fleets-South Coast Air Basin

E) Term and Amount

Start Date	End Date	Amount
08 / 11 / 2021	12 / 31 / 2023	\$ 200,000

F) Business Meeting Information

☐ ARFVTP agreements \$75K and under delegated to Executive Director

Proposed Business Meeting Date 8 / 11 / 2021 ☐ Consent ☒ Discussion

Business Meeting Presenter Kathryn Reid Time Needed: 5 minutes

Please select one list serve. Altfuels (AB118- ARFVTP)

Agenda Item Subject and Description:

THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, IRVINE. Proposed resolution approving Agreement ARV-21-018 with The Regents of the University of California, Irvine for a \$200,000 grant to develop a comprehensive and replicable blueprint to accelerate the adoption of MD/HD ZEVs within the South Coast Air Basin, and adopting staff's determination that this action is exempt from CEQA. (Clean Transportation Program funding.) Contact: Akasha Kaur Khalsa. (Staff Presentation: 5 minutes)

G) California Environmental Quality Act (CEQA) Compliance

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

☒ Yes (skip to question 2) ☐ No (complete the following (PRC 21065 and 14 CCR 15378)):

Explain why Agreement is not considered a "Project":

Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because .

2. If Agreement is considered a "Project" under CEQA:

a) ☐ Agreement **IS** exempt.

☐ Statutory Exemption. List PRC and/or CCR section number:

☒ Categorical Exemption. List CCR section number: 14 CCR section 15306 – Information Collection

☐ Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section:

Cal. Code Regs, tit. 14, §15306, Information Collection, provides that projects which consist of basic data collection, research and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource are categorically exempt from the provisions of CEQA. This project consists of developing a planning



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document for possible, future deployment of zero emission vehicles and related infrastructure equipment. The project will not cause direct physical changes to the environment, and there will be no physical construction. This project involves data collection, technology assessment, public outreach, administrative coordination efforts, planning, and similar activities. Therefore, the proposed project will have no significant effect on the environment and is categorically exempt under section 15306.

- b) ☐ Agreement **IS NOT** exempt. (consult with the legal office to determine next steps)

Check all that apply

- ☐ Initial Study
☐ Negative Declaration
☐ Mitigated Negative Declaration
☐ Environmental Impact Report
☐ Statement of Overriding Considerations

H) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)

Legal Company Name:	Budget
None	\$
	\$
	\$

I) List all key partners: (attach additional sheets as necessary)

Legal Company Name:
None

J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
ARFVTP	FY 19/20	601.118L	\$200,000
Funding Source			\$
Funding Source			\$
Funding Source			\$
Funding Source			\$

R&D Program Area: Select Program Area TOTAL: \$

Explanation for "Other" selection

Reimbursement Contract #: N/A Federal Agreement #: N/A

K) Recipient's Contact Information**1. Recipient's Administrator/Officer**

Name: Erika Blossom

Address: 160 Aldrich Hall



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City, State, Zip: Irvine, CA 92697-7600

Phone: (949) 824-2237

E-Mail: Erika.Blossom@uci.edu

2. Recipient's Project Manager

Name: Scott Samuelson

L) Selection Process Used

☒ Competitive Solicitation Solicitation #: GFO-20-601

☐ First Come First Served Solicitation Solicitation #: - -

M) The following items should be attached to this GRF

- | | | |
|---|---|-----------------------------------|
| 1. Exhibit A, Scope of Work | <input checked="" type="checkbox"/> | Attached |
| 2. Exhibit B, Budget Detail | <input checked="" type="checkbox"/> | Attached |
| 3. CEC 105, Questionnaire for Identifying Conflicts | <input checked="" type="checkbox"/> | Attached |
| 4. Recipient Resolution | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

CALIFORNIA ENERGY COMMISSION

Address:

City, State, Zip: Irvine, CA 92697-3550

Phone: (949) 824 -7302 ext. 11223

E-Mail: gss@apecp.uci.edu

Exhibit A
SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		Establish Blueprint Breadth within Existing Plans and Policies
3		Assess Charging and Fueling Infrastructure Needs
4	X	Establish Infrastructure Demand within the South Coast Air Basin Region for Transit, Drayage, and Long Haul
5		Conduct Industry and Community Stakeholder Outreach
6		Produce a Project Fact Sheet
7		Produce a Replicable Blueprint

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Scott Samuelsen Ghazal Razeghi Kate Forrest		
2	Scott Samuelsen Ghazal Razeghi Kate Forrest Michael Mac Kinnon		
3	Scott Samuelsen Ghazal Razeghi Kate Forrest Michael Mac Kinnon		
4	Scott Samuelsen Ghazal Razeghi Kate Forrest		
5	Scott Samuelsen Ghazal Razeghi Kate Forrest Michael Mac Kinnon		Steve Ritchie (UCI ITS) Craig Rindt (UCI ITS)
6	Scott Samuelsen Ghazal Razeghi Kate Forrest		
7	Scott Samuelsen Ghazal Razeghi Kate Forrest		

GLOSSARY

Specific terms and acronyms used throughout this scope of work are defined as follows:

Term/ Acronym	Definition
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CAP	Criteria Air Pollutants
CEC	California Energy Commission
Clean Transportation Program	Formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program
CPR	Critical Project Review
FCEV	Fuel Cell Electric Vehicle
FTD	Fuels and Transportation Division
GHG	Greenhouse Gases
HDV	Heavy Duty Vehicle
MD/HD	Medium- and Heavy-Duty
Recipient	The Regents of the University of California, Irvine
SoCAB	South Coast Air Basin
ZEV	Zero-Emission vehicles

BACKGROUND

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007), created the Clean Transportation Program (formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program). The statute authorizes the California Energy Commission (CEC) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. AB 8 (Perea, Chapter 401, Statutes of 2013) re-authorizes the Program through January 1, 2024, and specifies that the CEC allocate up to \$20 million per year (or up to 20 percent of each fiscal year's funds) in funding for hydrogen station development until at least 100 stations are operational. The Clean Transportation Program has an annual budget of approximately \$100 million and provides financial support for projects that:

- Reduce California's use and dependence on petroleum transportation fuels and increase the use of alternative and renewable fuels and advanced vehicle technologies.
- Produce sustainable alternative and renewable low-carbon fuels in California.
- Expand alternative fueling infrastructure and fueling stations.
- Improve the efficiency, performance, and market viability of alternative light-, medium-, and heavy-duty vehicle technologies.

- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets to alternative technologies or fuel use.
- Expand the alternative fueling infrastructure available to existing fleets, public transit, and transportation corridors.
- Establish workforce training programs and conduct public outreach on the benefits of alternative transportation fuels and vehicle technologies.

The CEC issued GFO-20-601 entitled “Blueprints for Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure” under the CEC’s Clean Transportation Program. To be eligible for funding under GFO-20-601, projects must also be consistent with the CEC’s current Clean Transportation Program Investment Plan, updated annually. In response to GFO-20-601, the Recipient submitted Proposal 43, which was proposed for funding in the CEC’s Notice of Proposed Awards on April 8, 2021. GFO-20-601 is hereby incorporated by reference into this Agreement in their entirety.

PROBLEM STATEMENT

The South Coast Air Basin (SoCAB) has been historically impacted by degraded air quality, driven by economic activities, particularly goods movement, and geographic and meteorological conditions that build and concentrate air pollutants within the region. Medium- and heavy-duty zero-emission vehicles (MD/HD ZEVs) are an emerging market which offer compliance with established greenhouse gas emissions reduction targets and offer an opportunity to tackle degraded regional air quality. While adoption is slowly developing, the pace is hampered by the lack of understanding of, and access to, charging and hydrogen refueling infrastructure. The current approach for infrastructure planning is to build charging and hydrogen stations on a fleet-by-fleet basis; however, without sufficient models of successful infrastructure for medium- and heavy-duty use, it may be challenging for fleets to navigate the processes of planning, construction, and operation. Investing in zero-emission vehicles, whether battery electric or fuel cell electric, is a considerable cost and requires coordinated planning with long lead times for both the procurement of vehicles and setting up the necessary charging and/or refueling infrastructure. Fleets need to be confident that they have a plan that minimizes risk and will ultimately meet their operational needs. The project is designed to help overcome medium- and heavy-duty operators’ resistance to adoption of ZEV technology by increasing transparency of the infrastructure requirements and reducing uncertainty surrounding cost and reliability. The project addresses the challenge of MD/HD ZEV adoption via an authoritative report with technology comparisons, maps, timelines, and job-training considerations. This blueprint for regional charging and hydrogen station networks can serve as a replicable template for fleets, targeting specific challenges within the transit, drayage, and long-haul sectors.

GOALS OF THE AGREEMENT

The goals of this agreement are to 1) develop a replicable blueprint for medium- and heavy-duty charging and hydrogen infrastructure within the South Coast Air Basin with a focus on transit, drayage, and long-haul trucking, 2) consider stakeholder input, and 3) ensure that the blueprint is available to the public, and to industry and community stakeholders. The blueprint is intended to facilitate the adoption of MD/HD ZEVs by reducing uncertainty and risk for medium- and heavy-duty fleets seeking to transition in response to grant incentives, education, and climate change, and urban air quality goals.

Objectives of the Agreement:

The objectives of this Agreement are to:

- Develop a replicable blueprint for the SoCAB region based on compiled data, technology assessment, stakeholder input, and workforce opportunities.
- Make the blueprint available to the public.
- Define technoeconomic and environmental breadth of the blueprint based on existing policies and plans.
- Define technical, economic, and environmental metrics of the proposed MD/HD ZEV infrastructure deployment.
- Assess charging/fueling station requirements, including overall process, critical steps, and timelines of implementing individual stations within a network.
- Analyze future region-specific charging/refueling demands focusing on transit, drayage, and long-haul requirements within the SoCAB region.
- Assess regional infrastructure network optimization with consideration of vocation-specific needs and impacts on disadvantaged communities.
- Attract and engage industry stakeholders.
- Attract and engage community stakeholders.
- Develop, with Saddleback College, a curriculum extension to their automotive education program that focuses on the evolution of light-duty and MD/HD ZEV.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

The goal of this task is to establish the lines of communication and procedures for implementing this Agreement. The Commission Agreement Manager (CAM) shall designate the date and location of this meeting and provide an agenda to the Recipient prior to the meeting.

The Recipient shall:

- Attend a "Kick-Off" meeting with the CAM, the Commission Agreement Officer (CAO), and a representative of the CEC Accounting Office. The Recipient shall bring their Project Manager, Agreement Administrator, Accounting Officer, and any others determined necessary by the Recipient or specifically requested by the CAM to this meeting.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.6) No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.7)
 - Subcontracts needed to carry out project (Task 1.8)

- The CAM's expectations for accomplishing tasks described in the Scope of Work
- An updated Schedule of Products and Due Dates
- Monthly Progress Reports (Task 1.4)
- Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
- Final Report (Task 1.5)

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits

Commission Agreement Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

CPRs provide the opportunity for frank discussions between the CEC and the Recipient. The goal of this task is to determine if the project should continue to receive CEC funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule, or budget.

The CAM may schedule CPR meetings as necessary, and meeting costs will be borne by the Recipient.

Meeting participants include the CAM and the Recipient and may include the CAO, the Fuels and Transportation Division (FTD) program lead, other CEC staff and Management as well as other individuals selected by the CAM to provide support to the CEC.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the CEC, but they may take place at another location or remotely.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on both match funding and permits.
- Conduct and make a record of each CPR meeting. Prepare a schedule for providing the written determination described below.
- Determine whether to continue the project, and if continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (please see section 8 of the Terms and Conditions). If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Lead Commissioner for Transportation for his or her concurrence.

- Provide the Recipient with a written determination in accordance with the schedule. The written response may include a requirement for the Recipient to revise one or more product(s) that were included in the CPR.

The Recipient shall:

- Prepare a CPR Report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work of the projects. This report shall be submitted along with any other products identified in this scope of work. The Recipient shall submit these documents to the CAM and any other designated reviewers at least 15 working days in advance of each CPR meeting.
- Present the required information at each CPR meeting and participate in a discussion about the Agreement.

CAM Products:

- Agenda and a list of expected participants
- Schedule for written determination
- Written determination

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

- Meet with CEC staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the CAM. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the CAM.

The technical portion of the meeting shall present an assessment of the degree to which project and task goals and objectives were achieved, findings, conclusions, recommended next steps (if any) for the Agreement, and recommendations for improvements. The CAM will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the CAM and the Grants Officer about the following Agreement closeout items:
 - What to do with any equipment purchased with CEC funds (Options)
 - CEC request for specific "generated" data (not already provided in Agreement products)

- Need to document Recipient's disclosure of "subject inventions" developed under the Agreement
 - "Surviving" Agreement provisions
 - Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

Task 1.4 Monthly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.

The objectives of this task are to summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, and to form the basis for determining whether invoices are consistent with work performed.

The Recipient shall:

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the CAM within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.
- In the first Monthly Progress Report and first invoice, document and verify match expenditures and provide a synopsis of project progress, if match funds have been expended or if work funded with match share has occurred after the notice of proposed award but before execution of the grant agreement. If no match funds have been expended or if no work funded with match share has occurred before execution, then state this in the report. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement.

Product:

- Monthly Progress Reports

Task 1.5 Final Report

The goal of the Final Report is to assess the project's success in achieving the Agreement's goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

The objectives of the Final Report are to clearly and completely describe the project's purpose, approach, activities performed, results, and advancements in science and technology; to present a public assessment of the success of the project as measured by the degree to which goals and objectives were achieved; to make insightful observations based on results obtained; to draw conclusions; and to make recommendations for further projects and improvements to the FTD project management processes.

The Final Report shall be a public document. If the Recipient has obtained confidential status from the CEC and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

The Recipient shall:

- Prepare an Outline of the Final Report, if requested by the CAM.
- Prepare a Final Report following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.
- Submit one bound copy of the Final Report with the final invoice.

Products:

- Outline of the Final Report, if requested
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Matching Funds

The goal of this task is to ensure that the match funds planned for this Agreement are obtained for and applied to this Agreement during the term of this Agreement.

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the CEC budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds shall be spent concurrently or in advance of CEC funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the CAM at least 2 working days prior to the kick-off meeting. If no match funds were part of the proposal that led to the CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state such in the letter. If match funds were a part of the proposal that led to the CEC awarding this Agreement, then provide in the letter a list of the match funds that identifies the:

- Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.
- Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the CAM if during the course of the Agreement additional match funds are received.
- Notify the CAM within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR meeting.

Products:

- A letter regarding match funds or stating that no match funds are provided
- Copy(ies) of each match fund commitment letter(s) (if applicable)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

The goal of this task is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track.

Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement. Although the CEC budget for this task will be zero dollars, the Recipient shall budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the CAM at least 2 working days prior to the kick-off meeting. If there are no permits required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies the:
 - Type of permit
 - Name, address and telephone number of the permitting jurisdictions or lead agencies
 - The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule, and the copies of the permits. The implications to the Agreement if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide the appropriate information on each permit and an updated schedule to the CAM.
- As permits are obtained, send a copy of each approved permit to the CAM.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 working days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required
- A copy of each approved permit (if applicable)
- Updated list of permits as they change during the term of the Agreement (if applicable)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)
- A copy of each final approved permit (if applicable)

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is to ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures. It will also provide CEC an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The Recipient shall:

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the CAM for review.
- Submit a final copy of the executed subcontract.
- If Recipient decides to add new subcontractors, then the Recipient shall notify the CAM.

Products:

- Letter describing the subcontracts needed, or stating that no subcontracts are required
- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

TASK 2 ESTABLISH BLUEPRINT BREADTH WITHIN EXISTING PLANS AND POLICIES

The goal of this task is to outline the technical, economic, and environmental metrics for the MD/HD ZEV blueprint within SoCAB based on existing private and public policies and plans.

The Recipient shall:

- Prepare a SoCAB MD/HD ZEV Blueprint Metrics Summary report that outlines the technical, economic, and environmental metrics of the proposed blueprint and submit to CAM. The report will:
 - Identify existing federal, state, and local goals to reduce transportation-related greenhouse gas emissions (GHG) and criteria air pollutants (CAP).
 - Review relevant existing policies, plans, and actions by local and regional jurisdictions within SoCAB, plus actions taken at the state level, to facilitate zero-emission vehicle infrastructure deployment.
 - Identify existing funding support for heavy-duty vehicle infrastructure.
 - Identify heavy-duty vehicle incentives.
 - List lead times for MD/HD ZEVs estimated to be available in dealerships or to be available special ordered to reduce uncertainty.
 - Identify relevant freight corridors and major transit routes and their coincidence with impacted disadvantaged communities.
 - Identify qualitative and quantitative metrics beyond project location to evaluate the effects of projects on local communities.
 - Define technical, economic, and environmental metrics of the proposed MD/HD ZEV infrastructure deployment.
 - Conduct a detailed and comprehensive literature and background review.

- Prepare a Notice of Public Posting of Blueprint Metrics Summary and submit to CAM.
- Post the Blueprint Metrics Summary for public review.

Products:

- SoCAB MD/HD ZEV Blueprint Metrics Summary
- Notice of Public Posting of Blueprint Metrics Summary

TASK 3 ASSESS CHARGING AND FUELING INFRASTRUCTURE NEEDS

The goal of this task is to develop a written guide detailing the decision-making steps in the deployment of electric charging and hydrogen refueling stations which can be easily adapted for fleets and local jurisdictions.

The Recipient shall:

- Compile data on electric charging and hydrogen station permitting and timeline of required steps into an MD/HD ZEV Infrastructure Guide and submit to CAM. MD/HD ZEV Infrastructure Guide will:
 - Identify critical steps in the overall process.
 - Identify planning and permitting requirements including:
 - Electric charging and hydrogen refueling standards.
 - Local/regional regulations.
 - Safety protocols.
 - Identify timelines for implementation.
 - Identify existing data gaps and barriers to charging and hydrogen infrastructure installation.
 - Identify infrastructure operation barriers, including interoperability between vehicle types and classes and vocation-specific constraints.
 - Discuss strategies to overcome identified barriers and reduce uncertainty, such as addressing potential issues involving the permitting process, ZEV procurement, and station safety.
 - Identify tools and data to support the optimal design and operation of charging/refueling stations, including co-location of station types and resiliency planning.

Identify technologies associated with MD/HD ZEV infrastructure deployment and rank promising innovative technologies.
- Arrange for the MD/HD ZEV Infrastructure Guide to be available to the public.
- Send a Written Notice of MD/HD ZEV Infrastructure Guide Public Availability to the CAM listing how or where the document is dispersed.

Products:

- MD/HD ZEV Infrastructure Guide

- Written Notice of MD/HD ZEV Infrastructure Guide Public Availability

TASK 4 ESTABLISH INFRASTRUCTURE DEMAND WITHIN THE SoCAB REGION FOR TRANSIT, DRAYAGE, AND LONG HAUL

The goal of this task is to analyze future region-specific charging and refueling demands focusing on transit, drayage, and long-haul requirements and the corresponding charging and refueling station configurations.

The Recipient shall:

- Write a SoCAB 2035 Charging and Refueling Demands Analysis Report and submit to CAM. The Report will:
 - Investigate the potential for charging and hydrogen infrastructure roll-out coordination between the two fueling types and with light-duty ZEV demand.
 - Identify vocation-specific hydrogen refueling requirements for transit, drayage, and long-haul trucking, such as station location, hydrogen capacities, operating hours, and services.
 - Develop deployment scenarios to meet projected 2035 hydrogen refueling demands for the transit, drayage, and long-haul given current clean vehicle mandates. Station configurations will be assessed based on environmental and technoeconomic performance.
 - Create infrastructure maps of major medium- and heavy-duty routes and charging and refueling station densities within the SoCAB region for assessed deployment scenarios.
 - Determine environmental impacts to disadvantaged communities for the assessed deployment scenarios, encompassing reductions in CAP and GHG emissions, producing DAC maps of:
 - Impacted DACs within SoCAB.
 - Reduction in CAP emissions within SoCAB.
- Provide an Overview of Viable Energy Back-Up System Configurations Handout for ensuring charging and hydrogen refueling resiliency during an emergency and submit to CAM.

Products:

- SoCAB 2035 Charging and Refueling Demands Analysis Report
- Overview of Viable Energy Back-Up System Configurations Handout

TASK 5 STAKEHOLDER AND COMMUNITY OUTREACH AND ENGAGEMENT

The goal of this task is to engage industry stakeholders (e.g., ZEV manufacturers, fleets, utilities, hydrogen providers, fueling station owners, charger manufacturers, and certified electric truck conversion specialists) and community stakeholders (e.g., local governments,

community colleges, environmental NGOs, and disadvantaged communities, financial institutions) and solicit input for inclusion in the development of the blueprint document.

TASK 5.1 Plan Stakeholder Outreach and Engagement

The goal of this task is to prepare for stakeholder input.

The Recipient shall:

- Develop an Outreach Plan specific to SoCAB and submit to CAM including, but not limited to:
 - An Industry Stakeholder Data Collection Plan.
 - Gather lessons learned from early adopters within the zero-emission bus space.
 - Establish a list of desirable data including, but not limited to:
 - SoCAB MD/HD vehicle populations.
 - Calculate growth of MD/HD ZEVs in SoCAB required to meet State mandates for the next 15 years.
 - Local fleet infrastructure requirements.
 - Timelines for infrastructure planning, construction, and operation.
 - List available data sources for existing and projected long-haul, drayage, and transit operations in SoCAB.
 - Describe strategy for data collection.
 - A Community Stakeholder Outreach Plan.
 - Develop a list of environmental justice and other community-based organizations within SoCAB.
 - Identify DACs within SoCAB impacted by MD/HD ZEV deployment.
 - Identify potential community benefits or issues surrounding MD/HD ZEV deployment, based on environmental impacts determined in Task 4.
 - Propose strategies for community stakeholder outreach and engagement.
- Produce a Job Potential and Workforce Training Report, including but not limited to:
 - Describe the education level of diesel truck mechanics.
 - Develop, with Saddleback College, a curriculum extension to their automotive education program that focuses on the evolution of light-duty and MD/HD ZEV.
 - Work with community college faculty who prepare the workforce.

- List degrees and certificates.
 - List and quantify MD/HD ZEV future charging and hydrogen fueling jobs that may be created.
- Provide Job Potential and Workforce Training Report to the CAM.

Products

- Outreach Plan
- Job Potential and Workforce Training Report

TASK 5.2 Engage Stakeholders

The goal of this task is to outreach to stakeholders in order to inform the creation of a replicable blueprint and thereby facilitate the adoption of MD/HD ZEVs within the SoCAB region.

The Recipient shall:

- Implement the Outreach Plan
 - Prepare Written Invitations to formal MD/HD ZEV Blueprint meetings with a focus on transit, drayage, and long-haul trucking and send each one to CAM.
 - Solicit guidance in a series of stakeholder meetings to inform the blueprint:
 - From industry stakeholders.
 - From community stakeholders.
 - From permitting and planning officials.
- Prepare and conduct stakeholder meetings that inspire stakeholders to help develop this replicable blueprint for medium- and heavy-duty charging and hydrogen infrastructure within SoCAB with a focus on transit, drayage, and long-haul trucking. Meetings will:
 - Identify opportunities, barriers, and stakeholder uncertainty.
 - Identify strategies to overcome barriers.
 - Reduce uncertainty and risk for fleets seeking to transition.
- Provide copies of presentation materials used at stakeholder meetings to the CAM.

Products

- Written Invitation to Formal MD/HD ZEV Blueprint Meetings
- Copies of Presentation Materials, if applicable, used at stakeholder meetings

TASK 6 Project Fact Sheet

The goal of this task is to develop both an initial and final project fact sheet that describes the CEC-funded project and the benefits resulting from the project for the public and key decision makers.

The Recipient shall:

- Prepare an Initial Project Fact Sheet at the start of the project that describes the project and the expected benefits. Use the format provided by the CAM.
- Prepare a Final Project Fact Sheet at the project's conclusion that describes the project, the actual benefits resulting from the project, and lessons learned from implementing the project. Use the format provided by the CAM.
- Provide at least six High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) from the project.

Products:

- Initial Project Fact Sheet
- Final Project Fact Sheet
- High Quality Digital Photographs

TASK 7 Blueprint

The goal of this task is to develop a replicable blueprint for SoCAB MD/HD ZEV charging and hydrogen infrastructure that reduces uncertainty and risk for fleets seeking to transition to ZEV.

The Recipient shall:

- Prepare and post a Blueprint report on MD/HD ZEV Infrastructure within the SoCAB region that describes the following:
 - Spatially resolved deployment of heavy-duty ZEV charging and hydrogen fueling in SoCAB between 2020 and 2050.
 - Regional station network deployment scale and timeline to meet state's goals.
 - Local fleet infrastructure requirements and timelines for infrastructure planning, construction, and operation.
 - Workforce requirements and opportunities.
 - Benefits to and impacts on disadvantaged communities.
 - Summary of stakeholder recommendations.
 - Organizations that contributed.
 - List infrastructure financing available.
 - Make the blueprint available to the public.

Products:

- Draft Blueprint
- Final Blueprint

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, IRVINE

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 ARV-21-018 with The Regents of the University of California, Irvine for a \$200,000 grant to develop a comprehensive and replicable blueprint to accelerate the adoption of MD/HD ZEVs within the South Coast Air Basin; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her 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 August 11, 2021.

AYE:

NAY:

ABSENT:

ABSTAIN:

Liza Lopez
Secretariat