



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2021)
COMMISSION

CALIFORNIA ENERGY

A) New Agreement # ZVI-21-018

B) Division	Agreement Manager:	MS-	Phone
Fuels and Transportation Division	Esther Odufuwa	44	916-897-3612

C) Recipient's Legal Name	Federal ID #
Alameda-Contra Costa Transit District	94-1492636

D) Title of Project
AC Transit Division 4 Hydrogen Fueling Infrastructure Upgrade

E) Term and Amount

Start Date	End Date	Amount
04 / 26 / 2022	03 / 31 / 2026	\$ 4,565,975.00

F) Business Meeting Information

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

Proposed Business Meeting Date 04 / 13 / 2022 ☐ Consent ☒ Discussion

Business Meeting Presenter Esther Odufuwa Time Needed: 5 minutes

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

Agenda Item Subject and Description:

ALAMEDA-CONTRA COSTA TRANSIT DISTRICT. Proposed resolution approving Agreement ZVI-21-018 with Alameda-Contra Costa Transit District for a \$4,565,975 grant to upgrade the existing hydrogen refueling station at the Oakland Seminary Avenue site and adopting staff's determination that this action is exempt from CEQA. (General Fund) Contact: Esther Odufuwa (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.



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- ☐ Statutory Exemption. List PRC and/or CCR section number:
- ☒ Categorical Exemption. List CCR section number: 14 CCR § 15268, 15301, 15302 & 15306
- ☐ Common Sense Exemption. 14 CCR 15061

b) (3) Explain reason why Agreement is exempt under the above section:

The proposed site is at an existing hydrogen fueling station located within the District owned bus maintenance yard; proposed upgrades to the current infrastructure will not significantly expand the use beyond that already existing; and the project also consists of replacement of existing equipment; the building permits required are a ministerial function; the data collection aspects of the project will not have any effect on the environment.

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, including those listed in the grant application: (attach additional sheets as necessary)

Legal Company Name:	Budget
Messer North America, Inc.	\$ 3,297,210
	\$ 0.00
	\$ 0.00

I) List all partners, including those listed in the grant application: (attach additional sheets as necessary)

Legal Company Name:

J) Budget Information



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Funding Source	Funding Year of Appropriation	Budget List Number	Amount
General Funds	FY 21/22	601.129TBA	\$4,565,975.00
Funding Source			\$
Funding Source			\$
Funding Source			\$
Funding Source			\$

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

Explanation for "Other" selection

Reimbursement Contract #: Federal Agreement #:

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

Name: Evelyn Ng

Address: 1600 Franklin Street

City, State, Zip: Oakland, CA, 94612

Phone: (510) 891 5405

E-Mail: eng@actransit.org**2. Recipient's Project Manager**

Name: Joe Callaway

Address: 1600 Franklin Street

City, State, Zip: Oakland, CA, 94612

Phone: (510) 891 7220

E-Mail: jcallaway@actransit.org**L) Selection Process Used**☒ Competitive Solicitation #: GFO-20-602☐ First Come First Served 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 type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |

Agreement Manager_____
Date_____
Office Manager_____
Date



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Deputy Director

Date

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Exhibit A

SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2	X	Design and Engineering
3		Hydrogen Safety Plan and Hydrogen Safety Design Review
4	X	Construction Procurement
5		Civil Site Construction
6	X	Hydrogen System Installation
7		Information Technology (IT) Data Collection Systems Design
8		Data Collection and Analysis
9		Project Fact Sheet

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Joe Callaway	N/A	N/A
2	Joe Callaway	Messer North America, Inc. & TBD	N/A
3	Joe Callaway	N/A	Pacific Northwest National Laboratory Center for Hydrogen Safety's Hydrogen Safety Panel
4	Joe Callaway	N/A	N/A
5	Joe Callaway	Construction Contractor – TBD	N/A
6	Joe Callaway	Messer North America, Inc.	N/A
7	Piush Dahal	N/A	N/A
8	Piush Dahal	N/A	N/A
9	Joe Callaway	N/A	N/A

GLOSSARY

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

Term/ Acronym	Definition
AC Transit	Alameda-Contra Costa Transit District
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer



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CEC	CEC
CPR	Critical Project Review
FCEB	Fuel Cell Electric Bus
FTD	Fuels and Transportation Division
HSP	Hydrogen Safety Panel
NREL	National Renewable Energy Laboratory
Recipient	Alameda-Contra Costa Transit District
ZEB	Zero-Emission Bus

Background

The Budget Act of 2021 (AB 128, Ting, Chapter 21, Statutes of 2021, as amended by Senate Bill (SB) 129, Skinner, Chapter 69, Statutes of 2021 and SB 170, Skinner, Chapter 240, Statutes of 2021) appropriated \$785,000,000 from the General Fund to support infrastructure deployments and manufacturing projects for zero-emission light-duty and medium- and heavy-duty vehicles.

On July 22, 2020, the California Energy Commission (CEC) released a Grant Funding Opportunity (GFO) entitled "Zero-Emission Transit Fleet Infrastructure Deployment." This competitive grant solicitation was to fund the electric vehicle charging or hydrogen refueling infrastructure needed to support the large-scale conversion of transit bus fleets to zero-emission vehicles (ZEVs) at multiple transit agencies serving diverse geographic regions and populations. In response to GFO-20-602, the Recipient submitted application #1 which was proposed for funding in the CEC's First Revised Notice of Proposed Awards on August 18, 2021. GFO-20-602 and the Recipient's application are hereby incorporated by reference into this Agreement in their entirety.

In the event of any conflict or inconsistency between the terms of the Solicitation and the terms of the Recipient's Application, the Solicitation shall control. In the event of any conflict or inconsistency between the Recipient's Application and the terms of the CEC's Award, the CEC's Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient's Application, the terms of this Agreement shall control.

Problem Statement:

The current hydrogen fueling facility at Division 4 maintenance yard located at 1100 Seminary Avenue, Oakland CA 94621 is nearing the end of its useful life and is due for an upgrade as the Alameda-Contra Costa Transit District (AC Transit, or the District) will be adding several fuel cell electric buses to its fleet within the next two years in accordance with its Zero-Emission Fleet Plan. The District needs to upgrade aging infrastructure to increase the fueling capacities to accommodate the planned increase of the zero-emission buses (ZEBs). This project supports the District's goal of accomplishing a completely zero-emission transit fleet.

Goals of the Agreement:

The goal of this Agreement is to upgrade the existing hydrogen fueling station at the District's Division 4 maintenance yard to support the increase in the number of fuel cell electric buses in their fleet.



Objectives of the Agreement:

The objective of this Agreement is to upgrade the hydrogen fueling station facility to support and refuel up to 60 fuel cell electric buses per day, and collect 12 months of data on no less than 20 new fuel cell electric buses that will be placed into service in 2024.

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 California Energy Commission (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.
- Provide a written statement of project activities that have occurred after the notice of proposed awards but prior to the execution of the agreement using match funds. If none, provide a statement that no work has been completed using match funds prior to the execution of the agreement. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.7) No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.8)
 - Subawards needed to carry out project (Task 1.9)
 - The CAM’s expectations for accomplishing tasks described in the Scope of Work
 - An updated Schedule of Products and Due Dates
 - Monthly Calls (Task 1.4)
 - Quarterly Progress Reports (Task 1.5)
 - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
 - Final Report (Task 1.6)



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Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits
- Written statement of Match Share Activities

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 Energy Commission 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 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.



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- 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 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 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 Calls

The goal of this task is to have calls at least monthly between CAM and Recipient to verify that



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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 verbally 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, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted, or the CAM determines that a monthly call is unnecessary.

The CAM shall:

- Schedule monthly calls.
- Provide questions to the Recipient prior to the monthly call.
- Provide call summary notes to Recipient of items discussed during call.

The Recipient shall:

- Review the questions provided by CAM prior to the monthly call.
- Provide verbal answers to the CAM during the call.

Product:

- Email to CAM concurring with call summary notes

Task 1.5 Quarterly 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 Quarterly 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. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at <https://www.energy.ca.gov/media/4691>.

Product:

- Quarterly Progress Reports



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Task 1.6 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.

In addition to any other applicable requirements, the Final Report must comply with the Americans with Disabilities Act (ADA) of 1990 (42 U.S.C. 12101 et seq.), which prohibits discrimination on the basis of disability; all applicable regulations and guidelines issued pursuant to the ADA; Cal. Gov. Code sects. 7405 and 11135; and Web Content Accessibility Guidelines 2.0, or a subsequent version, as published by the Web Accessibility Initiative of the World Wide Web Consortium at a minimum Level AA success criterion.

The Recipient shall:

- Prepare an Outline of the Final Report.
- Prepare a Final Report complying with ADA requirements and 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
- Draft Final Report
- Final Report

Task 1.7 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 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

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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 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 1.8 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 may 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

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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 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 1.9 Obtain and Execute Subawards

The goal of this task is to ensure quality products and to procure subrecipients 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.

The Recipient shall:

- Manage and coordinate subrecipient activities.
- If requested by the CAM, submit a draft of each subaward required to conduct the work under this Agreement to the CAM for review.
- If requested by the CAM, submit a final copy of the executed subaward.
- If Recipient intends to add new subrecipients or change subrecipients, then the Recipient shall notify the CAM.

Products:

- Letter describing the subawards needed, or stating that no subawards are required



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- Draft subcontracts (if requested)
- Final subcontracts (if requested)

TECHNICAL TASKS

TASK 2 DESIGN AND ENGINEERING

TASK 2.1 INITIATE PROJECT

The goal of this task is to initiate the project such that the scope, budget, and schedule is clear to all stakeholders. This task will also provide for the setup of the project management tools required to manage the project from initiation to completion.

The Recipient shall:

- Create an *AC Transit Project Charter* to document the intended project goals and deliverables and provide a copy to the CAM.
- Create an *AC Transit Project Workbook* which is a collection of project management templates in an Excel workbook which becomes a living project record and provide a copy to the CAM.
- Review and verify that the original AC Transit *Rough Order of Magnitude (ROM)* cost estimate and milestone schedule is still valid, update the ROM if necessary, and provide a copy to the CAM.
- Prepare the scope of work and a cost estimate for required Architecture and Engineering (A&E) services in preparation to engage an A&E firm from AC Transit's pool of on-call engineering firms. Produce a *A&E Scope of Work and an Independent Cost Estimate* and provide a copy to the CAM.
- Prepare an On-Call Task to the best qualified A&E firm, which requires the selection of a firm, a proposal from the selected firm, negotiations of a fair and reasonable price, and execution of a task order authorizing the work.
- Provide a copy of the *A&E On-Call Task Documentation* to the CAM.
- Prepare a Procurement Partnering Request to engage and provide the AC Transit Procurement team with as much project information as possible to begin their work.
- Prepare a *Project Roster With Roles and Responsibilities* of all project participants, stakeholders, and subject matter experts (SMEs) which details their expected contribution to the project team.
- Provide a copy of the *Project Roster with Roles and Responsibilities* to the CAM.
- Conduct an Internal Project Kickoff Meeting with all internal stakeholders and SMEs to review the project initiation documentation and collect any input from the expanded team for modifications or additions. An agenda for the Meeting must be prepared in advance, and minutes of the meeting must be kept.
- Provide a copy of the *Internal Kickoff Meeting Agenda and Minutes* to the CAM.

Products:

- AC Transit Project Charter
- AC Transit Project Workbook



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- Rough Order of Magnitude (ROM) cost estimate and milestone schedule
- A&E Scope of Work and an Independent Cost Estimate
- A&E On-Call Task Documentation
- Project Roster with Roles and Responsibilities
- Internal Kickoff Meeting Agenda and Minutes

TASK 2.2 SITE ENGINEERING

The goal of this task is to produce detailed plans, specifications, and a cost estimate for the construction contract work that are suitable for use in bidding, permitting, and construction.

The Recipient shall:

- Develop the preliminary design based on the existing conditions, basis of design, and desired project deliverable and produce a *Preliminary Planset (approximately 50%)* and provide a copy to the CAM.
- Conduct a Design Review of the Preliminary Design and produce a *Preliminary Design Review Resolution Matrix* and provide a copy to the CAM.
- Develop the detail design making modification noted in the preliminary design review and add details such that the design is approximately 95% complete and produce a *Detailed Planset (approximately 95%)*.
- Provide a copy of the *Detailed Planset (approximately 95%)* to the CAM.
- Conduct a detailed design review and produce a *Detailed Design Review Resolution Matrix* and provide a copy to the CAM.
- Develop *Project Specifications* providing detailed construction specifications and provide a copy to the CAM.
- Develop an independent cost estimate for the work included in the construction design to assist the District in determining whether the bids the District will receive reflect fair and reasonable pricing. Produce a *Detailed Construction Cost Estimate* and provide a copy to the CAM.

Products:

- Preliminary Planset (approximately 50%)
- Preliminary Design Review Resolution Matrix
- Detailed Planset (approximately 95%)
- Detailed Design Review Resolution Matrix
- Project Specifications
- Detailed Construction Cost Estimate

TASK 2.3 HYDROGEN SYSTEM ENGINEERING

The goal of this task is to produce detailed plans and schedule to ensure proper major equipment installation and interconnection.



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The Recipient shall:

- Develop the design for civil equipment location in a *Site Location Plan* and provide a copy to the CAM.
- Develop a *General Equipment Arrangement Plan* and provide a copy to the CAM.
- Develop the *Electrical Cabling Plan* for the equipment including cabling and ground plans and provide a copy to the CAM.
- Develop a *Piping and Instrumentation Diagram (P&ID)* and provide a copy to the CAM.
- Conduct a *Process Hazard Analysis (HazOps)* and provide a copy to the CAM.

Products:

- Site Location Plan
- General Equipment Arrangement Plan
- Electrical Cabling Plan
- Piping and Instrumentation Diagram (P&ID)
- Process Hazard Analysis (HazOPs)

[CPR WILL BE HELD IN THIS TASK, see Task 1.2 for details]

TASK 3 HYDROGEN SAFETY PLAN AND HYDROGEN SAFETY DESIGN REVIEW

The goal of this task is to develop a detailed hydrogen safety plan that the Recipient and all subcontractors or individuals involved in the construction, operation, and maintenance of the hydrogen fueling infrastructure will follow throughout the life of the Agreement and as long as the station is in operation.

The Recipient shall:

- Collaborate with the Pacific Northwest National Laboratory or Center for Hydrogen Safety's Hydrogen Safety Panel (HSP) to ensure the plan is comprehensive and demonstrates a strong commitment to safety.
- Prepare a *Preliminary Hydrogen Safety Plan* that includes, but is not limited to the following:
 - A description of the Recipient's work and activities to ensure safety, the unique technologies being demonstrated, and the evaluation results of any hazard analysis performed.
 - A description about how the Recipient will adhere to the most recent public guidelines for safety planning for hydrogen and fuel cell projects.
 - A description about how the Recipient will conform to the most current version of the National Fire Protection Association (NFPA) 2, Hydrogen Technologies Code being used by the authority having jurisdiction (AHJ) where the facilities and equipment will be located.
 - A description about how the Recipient will provide safety training for all operators to conduct the demonstration.
- Submit the *Preliminary Hydrogen Safety Plan* to the HSP for assessment and provide a copy to the CAM.



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- Collaborate with the HSP and the CAM to address questions, comments, or issues pertaining to the plan and prepare a *Final Hydrogen Safety Plan*.
- Provide a copy of the *Final Hydrogen Safety Plan* to the CAM.
- Participate in design reviews with the HSP before submitting design plans to the AHJ and other relevant regulatory organizations, such as the Federal Railroad Administration or United States Coast Guard.
- Prepare a *Design Review Memo* describing how the HSP's comments will be incorporated into the design plans.
- Report unintended hydrogen releases to the Certified Unified Program Agency (CUPA) and the CEC, if and when applicable.
- Report safety incidents, if and when applicable.

Products:

- Preliminary Hydrogen Safety Plan
- Final Hydrogen Safety Plan
- Design Review Memo
- Reports on unintended hydrogen releases (if and when applicable)
- Safety Incident Report using the National Renewable Energy Laboratory (NREL) Data Collection Tool (if and when applicable)

TASK 4 CONSTRUCTION PROCUREMENT

TASK 4.1 PREPARE CONSTRUCTION INVITATION FOR BID (IFB)

The goal of this task is to complete a procurement IFB document adequate to issue to request public bid for the construction portion of the project.

The Recipient shall:

- Produce an *IFB Document* consistent with all Federal, State, and District requirements for public bid of the construction improvements.
- Provide a copy of the *IFB Document* approved for posting to the CAM.

Products:

- IFB Document

TASK 4.2 PUBLIC IFB POSTING

The goal of this task is to post the IFB along with all salient exhibits on the District's public facing website, so all interested parties have access to all information required to submit a bid to perform the construction work.

The Recipient shall:

- Post all relevant documents on the bid posting page of the District's public facing website.
- Provide a link to the *Website Posting* to the CAM.



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Products:

- Link to the Website Posting

TASK 4.3 AWARD CONSTRUCTION IFB

The goal of this task is to identify the lowest responsive and responsible bidder and award the construction contract for the construction work to that bidder.

The Recipient shall:

- Collect all bids at the closing of the bid period.
- Evaluate each bid for responsiveness to the requirements in the IFB.
- Determine a proposed award to the lowest responsive and responsible bidder.
- Prepare a *Staff Report to the AC Transit Board of Directors* on the recommendation for award and provide a copy to the CAM.

Products:

- Staff Report to the AC Transit Board of Directors

TASK 4.4 FINALIZE CONSTRUCTION CONTRACT

The goal of this task is to memorialize the contract award in a contract agreement between AC Transit and the Awarded Contractor.

The Recipient shall:

- Prepare and execute a contract agreement.
- Provide a copy of the *Fully Executed Contract* to the CAM.

Products:

- Fully Executed Contract

TASK 4.5 ISSUE NOTICE TO PROCEED

The goal of this task is to issue a letter of contract notice authorizing the contractor to proceed with the work authorized in the contract.

The Recipient shall:

- Issue a *Notice to Proceed Letter* to the civil construction contractor and provide a copy to the CAM.

Products:

- Notice to Proceed Letter

[CPR WILL BE HELD IN THIS TASK, see Task 1.2 for details]

TASK 5 CIVIL SITE CONSTRUCTION

**GRANT REQUEST FORM (GRF)****TASK 5.1 PREPARE OPERATIONS FOR SHUT DOWN**

The goal of this task is to provide adequate notice to AC Transit Operations that the District 4 Hydrogen Fueling station will be taken out of service for an extended period. This will allow Operations, at their discretion, to relocate Fuel Cell Electric Buses (FCEB) to the District 2 Emeryville Division for alternative service. Additionally, this notice period will give Operations the lead time required to replace equipment on the FCEB routes with diesel buses.

The Recipient shall:

- Provide formal notification to the AC Transit Chief Operating Officer, Director of Transportation, and the Director of Maintenance that the District 4 Hydrogen Station will begin a planned shutdown effective on a specific date.
- Provide a copy of the *email notification to appropriate AC Transit staff* to the CAM.
- Work directly with the Hydrogen Station staff to ensure that the liquid hydrogen supply in the station is exhausted without refill at the time the station is removed from service.

Products:

- Email notification to appropriate AC Transit staff

TASK 5.2 DECOMMISSION EXISTING FACILITY

The goal of this task is to take the existing hydrogen station out of service in a manner that is consistent with industry best practices and safety protocol.

The Recipient shall:

- Vent all hydrogen remaining in both the liquid and gaseous storage vessels.
- Purge the hydrogen pathway with an inert gas (probably nitrogen).
- Depressurize all system components.
- Lock out and tag out all appropriate electrical circuits.
- Provide *Notification of Station with No Remaining Hydrogen* (liquid or gaseous) to the CAM.

Products:

- Notification of Station with No Remaining Hydrogen

TASK 5.3 REMOVE OLD EQUIPMENT

The goal of this task is to remove all station equipment that are not required at the upgraded station.

The Recipient shall:

- Remove the 9,000-gallon liquid hydrogen vessel.
- Remove the low-pressure hydrogen vaporizers.
- Remove the IC-50 Ionic Compressor unit.
- Remove the Hydrogen Dispensers at the Fuel Island.
- Provide *Notification of Station Area Ready for Construction* to the CAM.



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Products:

- Notification of Station Area Ready for Construction

TASK 5.4 CONSTRUCT SITE MODIFICATIONS

The goal of this task is to provide for the completion of the necessary construction improvements to support the installation of the new hydrogen fueling station equipment.

The Recipient shall:

- Construct foundations to support the larger liquid hydrogen vessel.
- Construct foundations to support the liquid hydrogen pumps.
- Install all switchgear, conduits, and electrical support equipment for the new hydrogen equipment.
- Provide *Photographs of Foundations and Equipment Installation* to the CAM.

Products:

- Photographs of Foundations and Equipment Installation

TASK 6 HYDROGEN SYSTEM INSTALLATION

TASK 6.1 ORDER MAJOR EQUIPMENT

The goal of this task is to ensure that the order of the major hydrogen equipment is completed such that all long lead times will not impact the scheduled project completion date. This is a major schedule milestone to ensure schedule compliance through the end of the project.

The Recipient shall:

- Prepare and provide a *Procurement Schedule with Order Lead Times* to the CAM.
- Order Liquid Hydrogen Tank.
- Order Liquid Hydrogen Pumps.
- Order Pressure Vaporizers.
- Order Hydrogen Dispensers.

Products:

- Procurement Schedule with Order Lead Times

TASK 6.2 MAJOR EQUIPMENT FABRICATION

The goal of this task is to monitor the fabrication to ensure delivery within the timeline parameters of the project schedule.

The Recipient shall:

- Conduct regular updates with equipment manufacturer regarding all long lead time equipment at each project team meeting.
- Prepare and provide *Project Status Meeting Minutes* with current updates on all long lead time equipment to the CAM.



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Products:

- Project Status Meeting Minutes

TASK 6.3 DELIVERY OF MAJOR EQUIPMENT

The goal of this task is to document the key project milestone when the major equipment is delivered to the project site.

The Recipient shall:

- Establish planned delivery date(s) on the project schedule.
- Provide the *Project Schedule* with planned delivery dates for the major equipment to the CAM.
- Receive major equipment at the project site.
- Provide *Photographs of Major Equipment on the Project Site* to the CAM.

Products:

- Project Schedule
- Photographs of Major Equipment on the Project Site

TASK 6.4 INSTALLATION OF MAJOR EQUIPMENT

The goal of this task is to provide for the installation and interconnection of the major equipment on/at the project site.

The Recipient shall:

- Install the Liquid Hydrogen Tank.
- Install the two Liquid Hydrogen Pumps.
- Install two Pressure Vaporizers.
- Install two Hydrogen Dispensers.
- Interconnect the hydrogen piping and tubing between the major equipment pursuant to the piping and instrumentation diagram (P&ID) plans.
- Interconnect electrical service and data wiring to the major equipment.
- Provide *Photographs of Major Equipment Installed*, including with hydrogen tubing or pipe interconnected and with electrical power and signal wiring connected, to the CAM.

Products:

- Photographs of Major Equipment Installed

TASK 6.5 FIRST LIQUID HYDROGEN FILL

The goal of this task is to document the major milestone of the first liquid hydrogen fill into the liquid hydrogen storage vessel. This represents actual charging of the hydrogen system with fuel.

The Recipient shall:



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- Conduct Quality Assurance/Quality Control (QA/QC) inspections and testing.
- Review QA/QC *Inspection Reports and Test Data* and approve the system ready to load with fuel.
- Prepare *Authorization Documentation* approving the first load of hydrogen fuel and provide to the sub-contractor and the CAM.
- Load the Liquid Hydrogen Vessel with liquid hydrogen from a delivery tanker truck.
- Confirm Liquid Hydrogen Vessel integrity and pressure stabilization.
- Prepare and provide *Load Documentation*, confirming the first load of hydrogen fuel from a delivery tanker truck and the liquid hydrogen vessel integrity and pressure stabilization.

Products:

- Inspection Reports and Test Data
- Authorization Documentation
- Load Documentation

TASK 6.6 HYDROGEN SYSTEM COMMISSIONING

The goal of this task is to adjust, tune and operate the hydrogen system to minimize fill time and maximize FCEB state of charge.

The Recipient shall:

- Adjust parameters in the filling table to achieve standard fueling time with minimal fuel temperature increase.
- Finetune target fueling pressures to achieve the optimum state of charge after fuel cools with the FCEB tanks.
- Provide *Test Fueling Fill Logs* to the CAM.
- Conduct back-to-back fueling tests to ensure that the system meets the minimum performance requirements.
- Provide *Summary Analysis of Fueling Tests* to the CAM.

Products:

- Test Fueling Fill Logs
- Summary Analysis of Fueling Tests

TASK 6.7 OPERATIONAL TESTING

The goal of this task is to monitor the system performance for 30 to 90 days to ensure continuous and proper operations.

The Recipient shall:

- Document performance exceptions during this the test period.
- Resolve any exceptions noted.
- Prepare and provide *Operational Testing Exception and Resolution Report* to the CAM.



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Products:

- Operational Testing Exception and Resolution Report

TASK 6.8 HYDROGEN STATION UPGRADE COMPLETE

The goal of this task is to accept the new hydrogen station and close the sub-contracts.

The Recipient shall:

- Complete the AC Transit *Project Deliverables Checklist* and provide a copy to the CAM.
- Complete AC Transit *Project Closure Checklist* and provide a copy to the CAM.
- Issue a *Certificate of Substantial Completion on the Civil Construction Contract* and provide a copy to the CAM.
- Issue a *Certificate of Substantial Completion on the Major Equipment Installation Contract* and provide a copy to the CAM.

Products:

- Project Deliverables Checklist
- Project Closure Checklist
- Certificate of Substantial Completion for the Civil Construction Contract
- Certificate of Substantial Completion for the Major Equipment Installation Contract

[CPR WILL BE HELD IN THIS TASK, see Task 1.2 for details]

TASK 7 INFORMATION TECHNOLOGY (IT) DATA COLLECTION SYSTEMS DESIGN

TASK 7.1 DATA CONNECTIVITY TO HYDROGEN FUELING SYSTEMS

The goal of this task is to eliminate manual steps on data collection and delivery products to automate the process during the first year.

The Recipient shall:

- Identify various systems from where data will be collected and established, and test secured connectivity to their data collection endpoints.
- Design secured Configuration Management repository and update processes to the current administration and future enhancements.
- Design and implement the real-time alert solution for proactive monitoring and real-time action, e.g., in case of system connectivity outage.
- Ensure the entire IT Data Collection System, in design and upon completion, is fully connected and integrated from user on the front end to database and operating system host on the backend working together in compliance with security policies.
- Design and implement Automated Self-Healing Data Collection processes and technologies that re-connect and re-process pending data collection automatically once an outage is resolved.



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- Design and implement Audit and Quality Assurance processes and tools to ensure robust and reliable connectivity and consistency in the overall Data Collection.

Products:

- Email to CAM upon completion of the design for IT Data Collection System, with a copy of the design for the System included

TASK 7.2 HYDROGEN FUEL CELL DATA COLLECTION

The goal of this task is to establish stable data load frequencies and ensure volumes are met in both ingestion models: batch data loads and continuous real-time data feeds during the first year.

The Recipient shall:

- Identify and develop a data ingestion source catalog specific to batch data load and real-time data feed.
- Design and implement data ingestion solutions to manage data source discovery, ingestion, frequency, and data load.
- Design and implement the real-time alert solution for proactive monitoring and real-time action in data feed outage or unexpected data formatting in the loading process.
- Design and implement messaging tooling to monitor and ensure expected data volume, velocity, and verity during Data Ingestion.
- Design configuration to meet near future potential data growth with scalability, multi-platform support, and advanced security features considering ZEB technology and vendor partnerships are evolving trends.
- Provide Data ingestion and processing through the data lake in the first year and Data reporting structures and business intelligence in the first year to the CAM.

Products:

- Data ingestion and processing template through the data lake in the first year
- Data reporting structures and business intelligence model in the first year

Task 7.3 SECOND YEAR DATA CONNECTIVITY

The goal of this task is to address data extraction and transformation processes while maintaining the quality and availability of Hydrogen Fuel data into the second year.

The Recipient shall:

- Design and implement Master Data Rules Engine used in the data extraction process to identify anomalous data.
- Design and implement Data Quality Service and related processes to ensure both data precision and accuracy.
- Design and implement Data Processing Fabrics to load structured datasets into



established Relation Data Models while unstructured data files are passed to Blob Storage with meta-data and indexing.

- Design and implement daily checks and real-time alerts for proactive monitoring and quality assurance.

Products:

- Email to CAM upon completion of all the Data Design and Implementation features described above

TASK 7.4 SECOND YEAR DATA PROCESSING

The goal of this task is to ensure testing and performance review for the second year by addressing performance, and end-to-end testing to identify potential constraints and proactive solutions to mitigate risks with a recursive system-wide review Hydrogen Fuel System reporting.

The Recipient shall:

- Execute full application performance review and data validations, data collection, and reporting.
- Perform end-to-end testing from Vehicle Data Collection to Business Intelligence, including workload stress tests synchronizing compute resources with data growth.
- Test Configuration Management for vertical and horizontal platform scalability.
- Provide Data ingestion and processing template through the data lake in the second year and Data reporting structures and business intelligence model in the second year to the CAM.

Products:

- Data ingestion and processing template through the data lake in the second year
- Data reporting structures and business intelligence model in the second year

TASK 8 DATA COLLECTION AND ANALYSIS

The goal of this task is to collect operational data from the project, report hydrogen quality test results, analyze that data for economic and environmental impacts, and include the data and analysis in the Final Report. Data will also be submitted quarterly for this hydrogen refueling project using the NREL Data Collection Tool.

The Recipient shall:

- Develop data collection test plan and/or prepare and submit the NREL Data Collection Tool once the hydrogen refueling station becomes operational and continue to do so every quarter until the end of the agreement.
- Perform and submit results of purity using hydrogen collected, at the nozzle for each hose at the station. Purity tests for the station will be performed:
 - at the time the station becomes operational
 - every six months after the station becomes operational during the approved term of this agreement; and,



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- as needed when the hydrogen lines are potentially exposed to contamination due to maintenance or other activity.

Hydrogen purity readings shall be collected according to the California Code of Regulations (CCR), Title 4 Business Regulations, Division 9 Measurement Standards, Chapter 6 Automotive Products Specifications, Article 8 Specifications for Hydrogen Used in Internal Combustion Engines and Fuel Cells, Sections 4180 and 4181.

- Collect and provide the following data:
 - Number, type, date, and location of hydrogen refueling stations installed.
 - Nameplate capacity of the installed equipment, in kg/day for hydrogen.
 - Location type, such as street, parking lot, hotel, restaurant, or multi-unit housing.
 - Total cost per refueling station, the subsidy from the CEC per refueling station, federal subsidy per refueling station, utility subsidy per refueling station, and privately funded share per refueling station.
- Collect and provide 12 months of throughput for no less than 20 new FCEBs, usage, and operations data from the project including, but not limited to:
 - Number of refueling sessions
 - Average refueling station downtime
 - Peak power delivered (kW)
 - Duration of active fueling
 - Average session duration
 - Energy delivered (kWh)
 - Average kg dispensed
 - Types of vehicles using the refueling equipment
 - Applicable price for fueling, including but not limited to: electric utility tariff, EVSP service contract, or public charger price
 - Payment method for public refueling, if applicable
 - Energy delivered back to grid or facility if a bidirectional charging use case (kWh)
 - Maximum capacity of the new fueling system
 - Normal operating hours, up time, downtime, and explanations of variations
 - Gallons of gasoline and/or diesel fuel displaced (with associated mileage information)
 - Expected air emissions reduction, for example:
 - Non-methane hydrocarbons
 - Oxides of nitrogen
 - Particulate Matter
 - Formaldehyde



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- Duty cycle of the current fleet and the expected duty cycle of future vehicle acquisitions
- Identify any current and planned use of renewable energy at the facility.
- Identify the source of the alternative fuel.
- Describe any energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code of Regulations.
- Provide data on potential job creation, economic development, and increased state revenue because of expected future expansion.
- Provide a quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Compare any project performance and expectations provided in the proposal to CEC with actual project performance and accomplishments.

Products:

- Quarterly NREL Data Collection Tool
- Initial, biannual, and as needed hydrogen purity test results
- Data collection information and analysis will be included in the Final Report

TASK 9 PROJECT FACT SHEET

The goal of this task is to develop 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 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 (6) six High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

Products:

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

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Alameda-Contra Costa Transit District.

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 ZVI-21-018 with Alameda-Contra Costa Transit District for a \$4,565,975 grant to upgrade the existing hydrogen refueling station at the Oakland Seminary Avenue site; 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 April 26, 2022.

AYE:

NAY:

ABSENT:

ABSTAIN:

Liza Lopez
Secretariat