LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY

STAFF REPORT

SUBJECT: Award of On-Call Task Order #4: Hydrogen Fueling Station and Hydrogen Fuel-Cell Bus Deployment Project Management and Technical Consulting

FROM: David Massa, Capital Projects Manager

DATE: July 1, 2024

Action Requested
Projects and Services Committee requests that the Board of Directors approve Resolution 19-2024, authorizing the Executive Director to execute Task Order #4 with the Center for Transportation and the Environment for project management and technical consulting services for the Atlantis Hydrogen Fueling Station Construction and Hydrogen Fuel Cell Bus Deployment project.

Background
LAVTA staff are preparing for the implementation of LAVTA's Innovative Clean Transit (ICT) plan, which charts the course for a 100% zero-emissions hydrogen fuel-cell electric bus (FCEB) fleet by 2034. With the anticipated arrival of LAVTA's first FCEBs in FY27, the Agency is readying the requisite infrastructure to support the hydrogen technology.

Transitioning to FCEBs from diesel electric hybrid buses involves a complex array of considerations due to the current stage of the hydrogen-powered bus industry. Critical factors include fuel storage options, dispensing methods, pressure requirements, fuel cell sizes, and communication protocols between buses and fueling stations. Each of these elements requires careful planning and integration to ensure a seamless transition and deployment. The lead times for fueling system components can extend beyond 18 months, necessitating advanced planning and coordination. Additionally, understanding the safety, codes, and standards for hydrogen fueling is crucial for ensuring the safe and consistent deployment of FCEBs. With the industry still developing, it is crucial for organizations like LAVTA to collaborate with companies that are at the forefront of technological advancements.

In 2022, LAVTA awarded its on-call zero-emissions bus consulting contract to the Center for Transportation and the Environment (CTE). CTE is a well-established nonprofit organization that has been instrumental in advancing sustainable transportation solutions in the transportation industry. With over 30 years of service, CTE has managed a portfolio of over $530 million in research, development, and demonstration projects, aiming to bring clean, efficient, and sustainable transportation technologies into the mainstream. Their work includes collaborating with various transit authorities, including SunLine Transit in Coachella Valley, AC Transit, Orange County Transportation Authority, and vehicle

technology manufacturers. CTE's expertise in engineering, planning, and project management has contributed to the deployment of over 1,100 zero-emission vehicles and the development of numerous transition plans for fleets. By working with CTE for the fueling station construction and initial FCEB bus procurement, LAVTA can leverage CTE's extensive experience and technical services to ensure the successful implementation of innovative fuel technologies.

Discussion
If approved, LAVTA will move forward with CTE to develop the next steps on constructing the Atlantis hydrogen fueling station, as well as the specifications for the initial FCEB procurement later in FY25. This is a multi-year Task Order that will be completed in phases as the transition to hydrogen fuel-cell technology occurs.

Below is a synopsis of the core services CTE will provide to LAVTA throughout the project. The complete scope of work is included as Attachment 1.

Bus and Route Analysis Modeling
CTE's comprehensive evaluation process involves modeling and simulation to optimize the performance and efficiency of transit buses. By collecting detailed route data and simulating various operational scenarios, CTE aims to provide actionable insights to LAVTA. This data-driven approach will assist LAVTA in refining its bus specifications and operational strategies, ensuring an optimized balance between performance and cost-effectiveness.

Hydrogen Demand Analysis
CTE will conduct a comprehensive evaluation of the energy requirements for fuel cell buses based on the modeling and LAVTA's FCEB procurement schedule. This assessment will consider various factors such as the planned service routes of LAVTA, the energy consumption patterns of the vehicles, and the operational capacity of the fueling station. The goal is to ensure that the fueling infrastructure can meet the demands of the bus routes and passenger loads of today and the future.

Hydrogen Fuel Station and Fuel Cost Modeling
Throughout this phase CTE will utilize the findings from the Hydrogen Demand Analysis to ensure that the scope of work for the station aligns with LAVTA's service needs. A fuel cost model will be developed to assess potential fuel demand and delivery schedules, alongside identifying alternative supply sources to guarantee consistent fuel availability for the initial roll-out of FCEBs. Also, with an eye towards future needs, CTE will perform additional modeling to project future fuel consumption trends as LAVTA expands its FCEB fleet, in accordance with its Zero-Emission Bus (ZEB) Transition Plan and procurement schedule.

Bus Procurement and Build
The bus procurement and build phase of the project involves a collaborative effort between LAVTA and CTE to oversee the procurement and production of buses from a selected OEM. This includes contract execution (assuming LAVTA purchases off an existing state or consortium contract), design approvals, and quality checks to ensure adherence to FTA's Quality Management System. Regular meetings and inspections will be scheduled to monitor

progress and maintain standards. CTE's role extends to providing expert guidance to LAVTA, ensuring that the buses meet all required inspections and audits before delivery.

Infrastructure Procurement, Design, and Build

This phase of the project is extremely complex including all necessary steps to procure, design, build, and installation of the hydrogen fueling infrastructure. CTE's role will be to support LAVTA in finalizing the hydrogen station's specifications, which will include storage, compression, dispensing and possibly production components. Key deliverables include:

- Preparing documents for an RFP to competitively procure the fueling station. To accomplish this CTE will utilize previous analyses, listed previously, to prepare detailed technical specifications customized to LAVTA's environment for the RFP.
- Provide ongoing support during the RFP process, including drafting addenda and assisting in proposal evaluations.

Once the RFP is awarded, the selected fueling station supplier will be responsible for all aspects related to the design and build of the hydrogen fueling station. This would include developing the site, installation plans for the station and obtaining all necessary permits.

Once the fueling station and FCEBs are delivered, the selected bus manufacturer and the fueling station supplier will commission the fueling station for operations with their buses.

Bus and Infrastructure Deployment

This phase involves several processes that LAVTA and CTE will follow to validate the performance of its new buses and fueling station after commissioning and acceptance testing. This includes post-delivery inspections and acceptance testing, workforce training, performance validation, and a validation test plan.

Deployment Validation

After revenue service of the buses begins in FY27, CTE will begin a comprehensive approach to evaluating the performance of the fuel cell electric buses deployed by LAVTA. By collecting, analyzing, and reporting on Key Performance Indicators (KPIs) over a 12-month period, they will be able to provide valuable insights into various aspects of the buses' operations.

Fiscal Impact

The funding for this project is included in LAVTA's FY25 approved capital budget. These funds will be applied over a three-year period as the various tasks progress, paid in 8 phases and 22 installments for a total cost of $676,000.

Recommendation

The Projects and Services Committee recommend that the Board of Directors approve Resolution 19-2024, authorizing the Executive Director to execute on-call task order #4 with CTE for Hydrogen Fueling Station and Fuel Cell Electric Bus Deployment Project Management and Technical Consulting services.

Attachments:

1. CTE 2024 LAVTA H2 Station & FCEB Deployment Proposal
2. Resolution 19-2024

Attachment 1

May 3, 2024

Hydrogen Station and Bus Deployment Project Management and Technical Consulting Proposal

Submitted by:

Center for Transportation and the Environment

Statement of Work

CTE will use its Zero-Emission Smart Deployment Methodology as a basis for a customized scope for Livermore-Amador Valley Transit Authority (LAVTA) to guide this project through the primary phases, depicted in Figure 1. CTE's methodology is designed to help agencies understand ZEB technologies and how to successfully deploy them. This Statement of Work (SOW) outlines the seven traditional steps of the deployment methods to suit LAVTA's project aims. It details the specific tasks, associated deliverables, estimated time to completion and CTE fees required to complete LAVTA's hydrogen Station project and deployment of fuel cell electric buses in revenue service on fixed routes with corresponding fueling infrastructure. This SOW also includes CTE's project controls and risk managing procedures to guide the effective and efficient management of this project. Each phase includes a brief summary of the activities included in this phase of the project and an estimated time to complete. Each phase narrative also includes a description of the services provided by CTE during that phase and the associated CTE deliverables including payment type and value. A summation table of the phases and CTE milestones can be found at the end of this SOW.

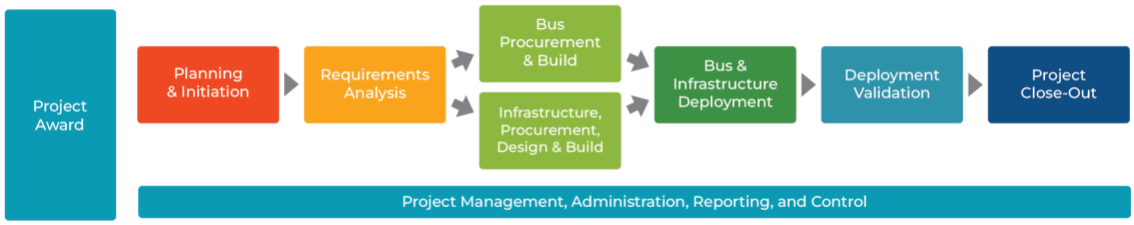

Figure 1: CTE's Smart Deployment Methodology

Phase 1: Project Planning & Initiation

Estimated Time to Complete: 2 months
Phase 1 CTE Fee Total: $36,000

Under Phase 1, CTE will work with LAVTA, the selected bus OEM, and other partners to finalize the project scope, approach, and timeline, and to define tasks, roles and responsibilities, and preliminary risks.

Phase 1 will result in an in-person formal kickoff of the project with all stakeholders and project team members to align the project team on tasks, assignments, timelines, and expectations to successfully meet project goals and objectives.

CTE will work with each team member during the kickoff and throughout the project refine the general schedule from the proposal to update it and incorporate specific project goals and constraints.

CTE will develop a project workbook that will outline these project goals and objectives, scope, and approach that will guide the execution of deliverables of the project. The Workbook will define the key milestones and stakeholders as well as activities and tasks, and timeline for the project.

CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverable	Billing Frequency	Fee
1.1	Project Kick Off Meeting Agendas, Presentations and Minutes	One-time at deliverable completion	$30,000
1.2	Project Workbook	One-time at deliverable completion	$6,000
		Total	$36,000

Phase 2: Requirements Analysis

Estimated Time to Complete: 3 months
Phase 2 CTE Fee Total: $55,000

Bus and Route Analysis Modeling
This task confirms the technical specifications for the bus and fueling equipment. CTE will evaluate the required range of the bus based on the duty cycle of scheduled routes selected for this deployment project and will determine daily fuel consumption and throughput requirements necessary to support deployment given LAVTA's fueling window. CTE will model Transit Agency's routes and a model bus to predict the range and performance of the bus on the target routes. The model uses powertrain simulation software, such as Autonomie, which was developed by Argonne National Laboratory for the heavy-duty trucking industry and modified by CTE for zero-emission transit buses. CTE will collect route data by riding selected routes on an existing in-service bus with a GPS data logger to capture time, distance, speed, acceleration, GPS coordinates, and grade. CTE will also collect data on local environmental conditions, passenger loading profiles, route planning details, and blocking schedules from the agency. CTE will use this data along with specifications for OEM options to simulate bus operations on agency routes. The results of the simulation provide the agency with information to be used as a guide for making operational decisions and to determine if any changes are required to the bus specifications, routes, or passenger service schedules in order to optimize bus operations and operating costs. CTE may also be able to arrange for a test drive of a fuel cell electric bus to confirm vehicle performance and fuel efficiency on specific routes, if the agency is in the proximity of another agency with a fleet of fuel cell electric buses.

Hydrogen Demand Analysis
CTE will evaluate the required service energy of the fuel cell buses based on the duty cycles of LAVTA's planned service, vehicle energy consumption to determine daily fuel requirements,

and the necessary service capacity of the fueling station ensure sufficient throughput during LAVTA's available fueling window. This will ensure storage tanks and fuel delivery will support the anticipated routing and passenger loading requirements of the fuel cell buses. This method will inform LAVTA on paths to optimize station operations and project operating costs for the agency's first FCEB deployment and beyond. CTE's experience of processing the aforementioned data in its fuel demand analysis tool complemented by Argonne National Lab's Heavy-Duty Refueling Simulation Analysis Model as needed to develop an estimate for power requirements, mobility, and footprint of a hydrogen refueling solution, will support the development of a specification capable of supporting the FCEB deployment.

Hydrogen Fuel Station and Fuel Cost Modeling
CTE will use the energy consumption requirements determined during the Hydrogen Demand Analysis to confirm the stations scope of work matches LAVTA's existing service requirements. CTE will then develop a fuel cost model to evaluate the potential fuel demand, fuel delivery frequency, and identify backup sources of supply to ensure fuel reliability for this initial deployment of FCEBs. In addition, CTE will also conduct modeling to look at what LAVTA can expect in future years in regards to fuel consumption once additional FCEBs are deployed in the Agency's fleet as denoted by LAVTA's ZEB Transition Analysis and updated procurement timeline.

CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverable	Billing Frequency	Fee
2.1	Bus and Route Analysis Modeling Presentation	One-time at deliverable completion	$29,000
2.2	Hydrogen Fuel Station and Fuel Cost Modeling Presentation	One-time at deliverable completion	$13,000
2.3	Review Documentation of Facility Upgrades to Safely Work on FCEBs	One-time at deliverable completion	$13,000
		Total	$55,000

Phase 3: Bus Procurement and Build

Estimated Time to Complete: 12 months
Phase 3 CTE Fee Total: $32,000

In this phase of the project, LAVTA and CTE support contracting and configurations development for bus procurement from the selected bus OEM from the selected state contract. LAVTA will execute procurement contracts with the selected bus OEM. The selected bus OEM will submit their final design for LAVTA approval before proceeding with production. LAVTA and CTE will participate in a pre-production meeting at the selected bus OEM's facility to confirm the design, and review quality control, quality assurance, and production procedures that will be in place for this order. Once the buses enter the production line, LAVTA and CTE will meet with the selected bus OEM regularly during the bus build to track progress. The phase will end with the delivery of the buses.

CTE offers to provide a first article pre-delivery inspection. If needed, CTE will engage the services of external vendors to complete the periodic inspections, resident inspections, or Buy America audits. The goal of the inspection is to ensure that the buses are ready to be delivered. LAVTA will approve buses for delivery and will conduct post-delivery acceptance inspections. These efforts are consistent with both the Inspection and Test and Inspection and Test Status elements of FTA's Quality Management System.

Throughout this phase of the project, CTE will provide guidance and oversight to LAVTA on bus manufacturing and design.

CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverables	Billing Frequency	Fee
3.1	CTE Review of Technical Specification and Bus Configuration Review/Comments	One-time at deliverable completion	$21,000
3.2	CTE Review of Bus Contract	One-time at deliverable completion	$10,000
3.3	Inspection Reports (Optional)	TBD based on final inspection scope	$50,000
3.4	Pre-Award Buy America Audits (Optional)	One-time at deliverable completion	$8,000
3.5	Post-Delivery Buy America Audits (Optional)	One-time at deliverable completion	$8,000
		Total	$97,000

Phase 4: Infrastructure Procurement, Design, and Build

Estimated Time to Complete: 12 months
Phase 4 CTE Fee Total: $135,000

This phase of the project includes all necessary steps to procure, design, build, and install the hydrogen fueling infrastructure. CTE will assist LAVTA as it finalizes the specifications for the hydrogen fueling station, including production, if specified, compression, storage, and dispensing. This includes the preparation of necessary documents required for competitive procurement of fueling station through a Request for Proposals (RFP). CTE will review and evaluate the existing modeled fuel demands and conceptual design previously provided to LAVTA by a third party. CTE will leverage the existing analysis to draft the technical specifications for the hydrogen fueling station to be included in the RFP. CTE will support LAVTA throughout the RFP process, drafting addenda as needed and assisting in the technical evaluation of proposals.

The selected fueling station supplier will be responsible for the design and build of the hydrogen fueling station. CTE will work with LAVTA to provide administrative oversight and technical reviews during the design, construction, and installation process for the hydrogen refueling

station. The fueling station supplier will develop site and installation plans for the station and obtain all necessary permits.

CTE will also assist LAVTA in establishing and coordinating a third-party, independent safety review of preliminary fueling station design plans prepared by the vendor. The review will be conducted by the American Institute of Chemical Engineers Center for Hydrogen Safety, and cost of conducting this review will be the responsibility of the vendor.

CTE will also work with the hydrogen fueling station supplier and the selected bus OEM to provide a seamless fueling interface that will meet LAVTA's requirements for refueling its fleet. CTE and the fueling station supplier will work with LAVTA and local utilities to provide the necessary utilities to operate the station.

Once the site preparation for the station is complete, the fueling station supplier will install and commission the equipment, during which CTE will coordinate weekly communication meetings and provide project overview and recommendations. CTE will organize and coordinate with LAVTA, the selected bus OEM, and the fueling station supplier to conduct first-responder and employee safety and operations training.

Additionally, LAVTA has begun a project to upgrade its Rutan Court site for maintenance facility upgrades to support the first set of FCEBs. CTE shall support LAVTA to ensure the maintenance facility requirements are addressed in the project design to engineer mechanical, electrical, and detection/alarm systems in maintenance facilities.

Once the fuel cell electric buses are delivered, the selected bus OEM and the fueling station supplier will commission the fueling station for operations with their buses.

As referenced in the narrative above, CTE will provide guidance, oversight and coordination to LAVTA throughout the station design and build.

CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverables	Billing Frequency	Fee
4.1	Refueling Station RFP Procurement Support, Technical Evaluation, and Selection of Station Supplier	Twice: one $25,000 payment at RFP publishing, and one $25,000 payment at provider selection	$50,000
4.2	Station Design/Build Support and Technical Advisory	Monthly installments over 12-month period	$60,000
4.3	Facility Modification Design/Build Support and Technical Advisory	Monthly installments over 3-month period	$15,000
		Total	$125,000

Phase 5: Bus and Infrastructure Deployment

Estimated Time to Complete: 6 months
Phase 5 CTE Fee Total: $35,000

After bus and station commissioning, LAVTA will conduct post-delivery inspections and acceptance testing. LAVTA staff will receive the necessary training to operate and maintain the vehicles and fueling station. Once buses and the fueling station have completed testing and acceptance by LAVTA as outlined in the previous phase, CTE will work with LAVTA and the selected bus OEM to validate the performance and operation of the buses and station through CTE's performance validation approach. CTE will develop a validation test plan to compare with modeled performance and determine if any operational changes are needed. The plan will provide for operating buses along the plan route(s) under controlled conditions (ambient temperature, HVAC load, passenger load, traffic patterns, etc.).

CTE will conduct the on-site validation testing based on the aforementioned plan and provide a validation test report to LAVTA. The report will include operational metrics such as: fuel economy (miles per kilogram), auxiliary load power draw (kW), fuel dispensed (kilograms), fueling rate (kilograms per minute), and initial and final state of fill as well as qualitative assessments of any issues that occur during validation. CTE will use the test results to support LAVTA finalizing the deployment strategy and schedules based on real world performance. This phase will close with the buses entering revenue service.

CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverables	Billing Frequency	Fee
5.1	Validation Test Plan	One-time at deliverable completion	$5,000
5.2	Validation Test Report	One-time at deliverable completion	$30,000
5.3	Updates to Operating and Fueling Recommendations Document as Needed	--	--
		Total	$35,000

Phase 6: Deployment Validation

Estimated Time to Complete: 12 months
Phase 6 CTE Fee Total: $95,000

After revenue service of the buses begins, CTE will collect, analyze, and report on Key Performance Indicators (KPIs) as a method of deployment validation to help track and understand the performance of the fuel cell electric buses for a period of 12 months. These metrics will allow LAVTA and FTA to fully understand operational metrics to determine if the projected benefits have been realized from the deployment of the fuel cell electric buses,

including impact on emissions, reductions in fuel consumption and cost, reductions in maintenance and costs, and any potential increase in ridership.

CTE will conduct a reporting workshop with LAVTA to determine the KPIs they wish to capture and the procedures for collecting data. CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverables	Billing Frequency	Fee
6.1	Deployment Validation KPIs Workshop Agenda, Presentation and Meeting Minutes	One-time at deliverable completion	$13,000
6.2	Data Collection and Reporting Plan and KPI Dashboard Development (where applicable)	One-time at deliverable completion	$10,000
6.3	Monthly or Quarterly KPI Reports	Monthly or quarterly installments over a 12 month period	$72,000
		Total	$95,000

Phase 7: Project Close Out

Estimated Time to Complete: 2 months
Phase 6 CTE Fee Total: $11,000

After the data collection period is over, CTE will issue a final report summarizing project results, findings, and lessons learned. LAVTA will close out the project with FTA.

CTE's deliverables and associated fees and billing frequency for this phase of the project are included in the table below.

ID	Deliverables	Billing Frequency	Fee
7.1	Final Report	One-time at deliverable completion	$11,000
		Total	$11,000

Phase 8: Project Management, Administration, Reporting, and Control

Estimated Time to Complete: 3 years
Phase 7 CTE Fee Total: $222,000

CTE will manage the entire deployment project including deployment planning; bus specification development; fuel station supplier selection; infrastructure planning and procurement support; and final deployment. Project management will include but is not limited to the following activities:

- *Coordinating regular meetings and information sharing between project partners and stakeholders* — CTE will coordinate regular, timely and appropriate meetings with the

needed staff. This will include recurring status meetings, as well as focused workshops and other events. Meeting coordination includes detailed agendas, meeting minutes and follow-up. These meetings and communications reduce effort required from agency's staff, increase transparency, and ensure that the agency's interests and goals are prioritized and fulfilled throughout the project term.

- *Advocating for the transit agency's interests* – CTE will act as an advocate and advisor solely focused on LAVTA's interests and concerns. CTE's 25 years of expert experience in electric vehicle technology is crucial when considering the unique requirements of fuel cell electric bus system planning, design, and construction. CTE's unbiased experience and broad network of industry contacts results in rapid and impartial guidance, helping transit agencies select the technology that will best suit their needs and avoid pitfalls of electric bus implementation without being beholden to the bus manufacturer. CTE has proven experience in ensuring transparency on the capabilities, operation, and maintenance of fuel cell electric buses, and ensuring that the final buses meet all specifications and service requirements.

- *Technical Advisory*– CTE provides technical advisory services throughout the project to ensure that agency staff understand the differences in technology and the best practices for deploying and operating ZEBs. CTE will advise LAVTA on ZEB technology best practices, key deployment strategies; ZEB supplier terms and conditions; fueling strategy, oversight of bus manufacturing and design; construction and installation of charging stations; and ZEB training, operations, and maintenance.

- *Tracking project tasks, risks, budget and timeline* — CTE will develop and maintain the project schedule, and ensure that all milestones and deliverables are completed effectively and on time. CTE will also rigorously track and drive the resolution of project risks and action items to ensure project success. The Risk and Action Item Mitigation Plan (detailed below) ensures timely resolution of critical path tasks and active mitigation of project risks.

CTE's project management fees will be split into years and invoiced in monthly installments.

Project Management	Billing Frequency	Fee
(7.1) Year 1	Monthly installments over a 12 month period	$108,000
(7.2) Year 2	Monthly installments over a 12 month period	$72,000
(7.3) Year 3	Monthly installments over a 12 month period	$42,000
	Total	$222,000

Project Administration, Reporting & Control

CTE will guide the entire project by the control and risk management procedures detailed below. CTE's centralized management of the work program will enable team members to concentrate on exceeding project goals and ensure production of deliverables in a clear and well-coordinated manner. Details of CTE's processes for ensuring the efficient accomplishment of these tasks are as follows.

Collaboration Tools

CTE will use e-mail to share project files and communications, coordinate tasks, track issues, and maintain project calendars.

Communications Plan

Team members will participate in weekly or bi-weekly conference calls to discuss project status and current issues. Meeting minutes will be taken and shared to ensure open access to proceedings. Online video conferencing will be employed when team members desire a presentation format to share status updates. CTE will schedule additional conference calls with team members as needed.

Reporting Plan

CTE will provide LAVTA with quarterly summaries of project status and activities, as well as Quarterly Management Reports (QMRs). The QMRs provide a summary of project status, progress, and accomplishments of the previous quarter and projections for the remainder of the project. The QMR will be structured to allow LAVTA to easily incorporate the information into the required FTA Quarterly Report submitted by LAVTA. The QMR will document project progress and activities as well as describe any known risks and plans for mitigation.

CTE will compile the QMRs with input from team members. CTE will provide team members with a QMR template that will include:

- Summary narrative of accomplishments by task/milestone during the period
- Estimated % completion and expected completion dates of task/milestone
- Significant events affecting progress and discussion of project variances
- Remaining activities and expected completion dates

CTE will also compile a Final Management Report at the end of the project to summarize the project accomplishments, realized benefits, and lessons learned.

Risk and Action Item Management and Mitigation Plan

CTE provides strong and engaged oversight of project progress through the suite of management controls and procedure outlined above. CTE's management method allows us to anticipate and manage potential risks and ensures quick recognition of any unexpected project risks that arise. All identified risks are documented; assigned to project team members for research, analysis, and resolution; and tracked through the project. Risks and related tasks are prioritized to ensure that

project team members remain focused on the right activities at the right time. Critical issues that remain unresolved or proposed solutions that impact project timeline, scope, budget or resources are escalated to LAVTA management for immediate attention.

Schedule Control Plan

CTE will be responsible for maintaining the overall schedule with input from team members.

Team members will report schedule status for their assigned tasks during the regular team calls. If the actual progress for a task is determined to be behind the planned schedule, CTE will work with LAVTA to develop appropriate corrective action based on the schedule variance, the amount of work remaining, the impact on other tasks, and impact on the overall schedule.

CTE Deliverables

Task ID	Task Name	Billing Frequency	Milestone Deliverable	Total Task Value	Cost per Installment ($)	Total Amount of All Installments
1	**Project Planning**			**$36,000**		
		One-time at deliverable completion	Project Kick Off Meeting Agendas, Presentations and Minutes		$30,000	$30,000
		One-time at deliverable completion	Project Workbook		$6,000	$6,000
2	**Requirements Analysis**			**$55,000**		
		One-time at deliverable completion	Bus and Route Analysis Modeling Presentation		$29,000	$29,000
		One-time at deliverable completion	Hydrogen Fuel Station and Fuel Cost Modeling Presentation		$13,000	$13,000
		One-time at deliverable completion	Review Documentation of Facility Upgrades to Safely Work on FCEBs		$13,000	$13,000
3	**Bus Procurement and Build**			**$97,000**		
		One-time at deliverable completion	CTE Review of Technical Specification and Bus Configuration Review/Comments		$21,000	$21,000
		One-time at deliverable completion	CTE Review of Bus Contract		$10,000	$10,000
		TBD based on final inspection scope	Inspection Reports		$50,000	$50,000
		One-time at deliverable completion	Pre-Award Buy America Audits		$8,000	$8,000
		One-time at deliverable completion	Post-Delivery Buy America Audits		$8,000	$8,000
4	**Infrastructure Procurement, Design, and Build**			**$125,000**		
		Twice: one $25,000 payment at RFP publishing, and one $25,000 payment at provider selection	Refueling Station RFP Procurement Support and Technical Evaluation, and Selection of Station Supplier		$25,000	$50,000
		Monthly installments over 12-month period	Station Design/Build Support and Technical Advisory		$5000	$60,000

		Monthly installments over 3-month period	Facility Modification Design/Build Support and Technical Advisory		$5,000	$15,000
5	**Bus and Infrastructure Deployment**			**$35,000**		
		One-time at deliverable completion	Validation Test Plan		$5,000	$5,000
		One-time at deliverable completion	Validation Test Report		$30,000	$30,000
		--	Updates to Operating and Fueling Recommendations Document as Needed		--	--
6	**Deployment Validation and Key Performance Indicators**			**$95,000**		
		One-time at deliverable completion	KPI Workshop Agenda, Presentation and Meeting Minutes		$13,000	$13,000
		One-time at deliverable completion	Data Collection and Reporting Plan and KPI Dashboard Development (where applicable)		$10,000	$10,000
		Monthly or quarterly installments over a 12-month period	Monthly or Quarterly KPI Reports		$6,000	$72,000
7	**Project Close Out**			**$11,000**		
		One-time at deliverable completion	Final Report		$11,000	$11,000
8	**Project Management, Administration, Reporting, and Control**			**$222,000**		
		Monthly installments over 12-month period	Year 1		$9,000	$108,000
		Monthly installments over 12-month period	Year 2		$6,000	$72,000
		Monthly installments over 12-month period	Year 3		$3,500	$42,000
			Total CTE Budget	***$676,000***	**--**	***$676,000***

References

Name	Organization	Title	Phone	Email
Cliff Thorne	Orange County Transportation Authority	Director of Maintenance and Motorist Services	(714) 560-5975	cthorne@octa.net
James Beck	Gold Coast Transit District	Director of Operations and Maintenance	(805) 587-8898	jbeck@gctd.org
Sal Llamas	Alameda-Contra Costa Transit District	Director of Maintenance	(510) 891-7215	sllamas@actransit.org

RESOLUTION NO. 19-2024

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE LIVERMORE AMADOR VALLEY TRANSIT AUTHORITY AWARDING A TASK ORDER TO THE CENTER FOR TRANSPORTATION AND THE ENVIRONMENT FOR PROJECT MANAGEMENT AND TECHNICAL CONSULTING FOR THE ATLANTIS FUELING STATION CONSTRUCTION AND HYDROGEN FUEL CELL BUS PROJECT

WHEREAS, LAVTA requires the services of a consulting firm with expertise in hydrogen technologies to develop preparing for the implementation of the Agency's Innovative Clean Transit (ICT) plan, including constructing the hydrogen fueling station and procuring hydrogen fuel cell buses; and

WHEREAS, LAVTA has previous experience with Center for Transportation and the Environment (CTE) having utilized them to develop the agency's ZEB plan (RFP #2016-04); and

WHEREAS, LAVTA is currently utilizing CTE for On-Call Zero Emissions Bus Consulting Services (RFP #2022-05) to assist with the agency's pursuit of Low-No grant and Transit and Intercity Rail Capital Program funding to fully construct the Atlantis Facility; and

WHEREAS, CTE's staff are recognized as experts throughout the transportation industry for having successfully developed numerous zero emissions projects; and

WHEREAS, CTE and LAVTA staff have negotiated a detailed scope of work for the Hydrogen Fueling Station and Hydrogen Fuel-Cell Bus Deployment Project Management and Technical Consulting project at a firm fixed fee of $676,000.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Livermore Amador Valley Transit Authority that the Executive Director may enter into a task order contract with Center for Transportation and the Environment for $676,000 for the project management and technical consulting for the Hydrogen Fueling Station and Hydrogen Fuel-Cell Bus Deployment project; and

BE IT FURTHER RESOLVED that the Board of Directors authorizes the Executive Director to expend a 10% contingency amount not to exceed $67,600, for a total authorized amount not to exceed $743,600; and

BE IT FURTHER RESOLVED that the Executive Director is authorized to execute a task order with CTE in a form approved by LAVTA's Legal Counsel.

PASSED AND ADOPTED this 1st day of July 2024

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Evan Branning, Chair

ATTEST:

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Christy Wegener, Executive Director

APPROVED AS TO FORM:

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Michael Conneran, Legal Counsel