

# ALAMEDA-CONTRA COSTA TRANSIT DISTRICT



## STAFF REPORT

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**MEETING DATE:** 6/22/2022

**Staff Report No. 22-319**

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**TO:** AC Transit Board of Directors  
**FROM:** Michael A. Hursh, General Manager  
**SUBJECT:** AC Transit Zero Emission Bus Transition Plan

### ACTION ITEM

#### **RECOMMENDED ACTION(S):**

Consider approving the AC Transit Zero Emission Bus Transition Plan.

#### **STRATEGIC IMPORTANCE:**

Goal - Environmental Improvement  
Initiative - Zero Emission Programs

AC Transit's Zero Emissions Bus Transition Plan provides a long-term fleet and facilities management plan to achieve the goal of transitioning the bus fleet to 100 percent zero-emissions by 2040. This plan directly supports the District's Environmental Improvement Goal along with the following Initiatives: Zero Emission Programs and Infrastructure Modernization, Employee Recruitment, Training & Retention, and Service Quality.

#### **BUDGETARY/FISCAL IMPACT:**

There are no budgetary or fiscal impacts directly related to this report. However, each phase of ZEB deployment will have associated costs that will be presented to the Board for review and approval. The District intends to pursue funding opportunities vigorously; approving this plan will meet new statutory provisions from the Federal Transit Administration (FTA) for Buses and Bus Facilities Competitive Program and the Low or No Emission Program grants.

#### **BACKGROUND/RATIONALE:**

The Bipartisan Infrastructure Law (BIL), Public Law 117-58, as enacted in the Infrastructure Investment and Jobs Act, signed by President Biden on November 15, 2021, amended the statutory provisions for the Grants for Buses and Bus Facilities Competitive Program (49 U.S.C. § 5339(b)) and the Low or No Emission Program (49 U.S.C. § 5339(c)) to include the requirement that any application for projects related to zero-emission vehicles include a Zero-Emission Transition Plan. On December 1, 2021, the FTA issued a "Dear Colleague" letter providing information regarding the minimum requirements of a Zero-Emission Transition Plan.

The FTA will rate more highly zero emission projects where the applicant is able to demonstrate how the proposed project and fleet transition plan support the conversion of the agency's overall fleet to zero emissions. To meet the FTA requirements, staff prepared a new Zero-Emission Transition Plan that is compliant

with the Bipartisan Infrastructure Law and incorporates what was already implemented to comply with the California Air Resources Board's (CARB's) Innovative Clean Transit (ICT) Regulation. The new ZEB Transition Plan includes the following requirements:

- a) A goal of full transition to zero-emission buses by 2040 with careful planning that avoids early retirement of conventional internal combustion engine buses
- b) Identification of the types of zero-emission bus technologies a transit agency is planning to deploy, such as battery electric or fuel cell electric buses
- c) A schedule for construction of facilities and infrastructure modifications or upgrades, including charging, fueling, and maintenance facilities, to deploy and maintain zero-emission buses. This schedule must specify the general location of each facility, type of infrastructure, service capacity of infrastructure, and a timeline for construction
- d) An acquisition schedule for zero-emission and conventional internal combustion engine buses. This schedule for bus purchases must identify the bus types, fuel types, and number of buses
- e) A schedule for conversion of conventional internal combustion engine buses to zero-emission buses, if any. This schedule for bus conversion must identify number of buses, bus types, the propulsion systems being converted
- f) A description on how a transit agency plans to deploy zero-emission buses in disadvantaged communities as listed in the latest version of "CalEnviroScreen"
- g) A training plan and schedule for zero-emission bus operators, maintenance, and repair staff
- h) A plan to identify potential funding sources
- i) Identification of Start-up and Scale-up Challenges

The District will need to constantly monitor funding and financing opportunities due to the uncertain nature of transit funding over the next 18-year timeframe. Through the Metropolitan Transportation Commission's existing Transit Capital Priorities (TCP) Program, the District is eligible to receive FTA funds for 70-80% of the cost of a bus replacement. The District will be responsible for the remaining 20-30% local matching funds for the bus replacement. The first step towards securing funding opportunities is having a ZEB Transition Plan.

The District is deploying both battery electric buses (BEB's) and fuel cell electric buses (FCEB's) and continues industry leading testing of the Zero Emissions Transit Bus Technology Analysis Study (ZETBTA). This study is designed to evaluate the most reliable long-term operational range, financial efficiency, and sustainability of ZEBs. The ZETBTA study provides the AC Transit Board of Directors an all-encompassing update on ZEB performance, operations, and maintenance (O&M) costs including the cost of fuel/energy, and infrastructure O&M costs. The nimble study permits modifications to the transition plan, which is why, based on performance results, a fleet mix of 70% FCEB and 30% BEB is planned in the transition plan. Additionally, operating both technologies offer some resiliency advantages during public safety power shut-off events, or when hydrogen fuel might be unavailable.

Through more than 20-years of experience deploying ZEBs, AC Transit has learned there are still many unknowns and unexpected challenges to overcome. ZEB technologies are in a period of rapid development and change with both battery electric and fuel cell electric bus technologies having start-up and scale-up challenges as listed in Section I of the Plan. Without a doubt, ZEBs are readily available; however, AC Transit will need policy makers, industry original equipment manufacturers (OEMs) and energy providers to help address the existing challenges and risk to successfully transition the fleet.

It is important to note the District's ZEB Transition Plan is a living document meant to guide the implementation of zero-emissions bus fleets and help the District work through many of the potential challenges to explore solutions. The Plan provides estimated timelines based on best available information for bus purchases, infrastructure upgrades, workforce training, or any other timelines. AC Transit may update the Plan as needed with the most current information and industry best practices.

To stay current with advances in ZEB technology, staff remains active with the American Public Transportation Association (APTA), California Transit Association (CTA) and several other national, regional, and local ZEB related memberships. As technology advances and solutions to challenges are discovered, staff will make necessary adjustments to the Plan and provide updates to the AC Transit Board of Directors.

#### **ADVANTAGES/DISADVANTAGES:**

The advantage of adopting a ZEB Transition Plan is that the plan will bring the District into compliance with the Bipartisan Infrastructure Law, California Air Resources Board (CARB) Innovative Clean Transit Regulation (ICT) and will meet new statutory provisions from the Federal Transit Administration (FTA) for Buses and Bus Facilities Competitive Program and the Low or No Emission Program grants.

There are no disadvantages to adopting the Plan.

#### **ALTERNATIVES ANALYSIS:**

Staff found no practical alternatives to the course of action recommended in this report.

#### **PRIOR RELEVANT BOARD ACTION/POLICIES:**

Staff Report 220-224: Adoption of Resolution 20-029 approving the AC Transit Zero-Emissions Bus (ZEB) Rollout Plan.

Staff Report 20-017: Adoption of the AC Transit Clean Corridors Plan 2020, which updates the original Clean Corridors Plan, to coordinate the rollout of zero-emission buses to equity goals while considering vehicle range.

Staff Report 19-152: Annual update on compliance with California Air Resources Board (CARB) regulations.

Staff Report 19-054: Report on the District's study on Zero Emissions Bus (ZEB) expansion.

#### **ATTACHMENTS:**

1. AC Transit Zero-Emissions Bus Transition Plan

#### **Prepared by:**

Salvador Llamas, Chief Operating Officer

#### **In Collaboration with:**

Cecil Blandon, Director of Maintenance

Joe Callaway, Director of Capital Projects

Robert del Rosario, Director of Services Development and Planning

William Tonis, Director of Project Controls & Systems Analysis

Claudia Burgos, Director of Legislative Affairs & Community Relations

Derik Calhoun, Director of Transportation

Manjit K. Sooch, Director of Systems and Software Development

Fred Walls, Director of Procurement and Materials

**Approved/Reviewed by:**

Ramakrishna Pochiraju, Executive Director of Planning & Engineering

Ahsan Baig, Chief Information Officer

Beverly Greene, Executive Director of External Affairs, Marketing & Communications