

Agenda Report

January 30, 2023

TO: Honorable Mayor and City Council

THROUGH: Municipal Services Committee (January 24, 2023)

FROM: Department of Transportation

SUBJECT: ADOPT A RESOLUTION ADOPTING THE PASADENA ZERO EMISSION BUS ROLLOUT PLAN

RECOMMENDATION:

It is recommended that the City Council:

1. Find that the following proposed action is exempt from review pursuant to the California Environmental Quality Act (CEQA), pursuant to State CEQA Guidelines Section 15061 (b) (3); and
2. Adopt a resolution adopting the Pasadena Zero Emission Bus Rollout Plan (Rollout Plan) that provides the roadmap to transition the City's public transit fleet to a zero emission bus (ZEB) fleet.

TRANSPORTATION ADVISORY COMMISSION RECOMMENDATION:

On December 8, 2022, the Transportation Advisory Commission (TAC) recommended supporting the adoption of the Rollout Plan that is attached and provides the roadmap to transition the City's public transit fleet to a zero emission bus (ZEB) fleet.

BACKGROUND:

In December 2018, the California Air Resources Board (CARB) adopted the Innovative Clean Transit (ICT) rule that requires all public transit operators in California to transition to 100 percent ZEB fleets by 2040. For the City, the required transition milestones include the following:

- July 1, 2023: Deadline to provide a "ZEB Rollout Plan"
- 2026: 25% of new bus purchases must be ZEB
- 2029: All buses purchased must be ZEB
- 2040: All buses must be ZEB

The Rollout Plan that is attached (Attachment A) identifies the proposed roadmap to transition the Pasadena transit fleet to a full deployment of a ZEB fleet by 2037 and start the transition as early as calendar year 2023. The Rollout Plan has been prepared to meet the ZEB Rollout Plan requirements due to CARB by July 1, 2023.

The Rollout Plan identifies the fleet replacement schedule to implement the ZEB transition, the ZEB technology that will be implemented, the infrastructure needed, a training plan for drivers and maintenance staff, and potential funding sources. The transition to a ZEB fleet is a significant undertaking for a system the size of Pasadena Transit (29) and Pasadena Dial-A-Ride (15), which currently has a fleet of 44 vehicles. Given this, staff took a number of steps prior to 2018 to prepare for the ZEB transition. Below is a snapshot describing Pasadena's approach to preparing for compliance with the ICT rule.

- Participation in the Los Angeles Regional Electric Bus Working Group, a working group primarily made up of transit agencies and public utilities that have been meeting regularly to share information and exchange ZEB experiences.
- Attendance at numerous conferences, summits, and workshops focused specifically on zero emission technologies in the transit industry to address approaches that have been or will be implemented, lessons learned, ongoing research, and potential funding opportunities.
- Met with various ZEB manufacturers, toured ZEB facilities, and demonstrations.
- Implemented day-long demonstrations of zero-emission buses.

Technology and Estimated Cost

The Rollout Plan evaluated Battery Electric Bus (BEB) and Fuel Cell Electric Bus (FCEB), which are the two ZEB technologies available. It is recommended that the City pursue a mixed fleet with a BEB Pasadena Dial-A-Ride fleet and a FCEB Pasadena Transit fleet in order to meet the operating needs of the Pasadena Transit and Pasadena Dial-A-Ride systems. During the development of the Rollout Plan various demonstrations were conducted to test the range of ZEB vehicles. These vehicle demonstrations indicated that the BEB range could support a one for one vehicle replacement in the Pasadena Dial-A-Ride fleet. There currently is no BEB available that can meet the full range requirements needed for the Pasadena Transit fleet. A FCEB does not have this challenge. Based on the evaluation, it is anticipated that the Pasadena Transit fleet would require 15 additional BEB's over the current 29 vehicle fleet due to the current range limitations (i.e., a 52% increase). Although the long-term recommended plan is to transition to a mixed fleet of FCEB and BEB, in order to advance the ZEB transition, a Pasadena Transit BEB fleet will be initially pursued while the FCEB infrastructure is developed.

The cost to transition to the mixed ZEB fleet is estimated at \$61,724,731 between 2022 and 2040. The net present value is \$38,816,478 (if vehicles were purchased today). In order for the City to transition to a ZEB fleet, it is critical that the City has a City owned transit operations and maintenance facility (TOMF). The estimated cost to build the TOMF is estimated at \$65 million. At the September 19, 2022 City Council meeting, the City Council recommended including the TOMF as the third priority project for the Metro

Measure R Mobility Improvement Project. This list is under consideration with Metro. Additional costs related to a hydrogen facility not already identified in the ZEB Plan, will be identified as part of a separate study and presented to City Council at a future meeting.

The table below depicts the estimated cost to transition to a ZEB fleet compared with the current replacement cost of the TOMF for the current propulsion type that is a Renewable Natural Gas (RNG) Pasadena Transit fleet and an unleaded Pasadena Dial-A-Ride fleet. All the figures in the table reflect the estimated escalated cost to transition through 2040.

Propulsion Type	Cost Through 2040
RNG/Unleaded (current fleet)	\$29,982,281
Mixed (BEB & FCEB) ZEB Fleet	
FCEB (Pasadena Transit) Fleet	\$46,415,589
FCEB Infrastructure	\$ 3,005,207
BEB (Pasadena Dial-A-Ride) Fleet	\$ 5,080,888
BEB Infrastructure	\$ 731,700
Training and Other Maintenance	\$ 6,491,347
Total Mixed ZEB fleet	\$61,724,731

Outreach

Staff presented draft findings of the ZEB Rollout Plan to the following City commissions and committee to receive input on the draft Rollout Plan. Comments received from the various meetings were incorporated into this final draft of the Rollout Plan:

- Transportation Advisory Commission on June 24, 2021
- Municipal Services Committee on October 12, 2021
- Northwest Commission on November 9, 2021
- Environmental Advisory Commission on November 9, 2021

The most notable modification made in response to comments received include the acceleration of the timeline to transition to a zero emission fleet and the recommended approach to a mixed fleet of FCEB and BEB's. The initial timeline identified the ZEB transition beginning in 2027, following the anticipated construction of the Transit Operations and Maintenance Facility (TOMF). However, in order to start the ZEB transition sooner staff will return in the near future with a separate action seeking authorization to purchase the first ZEB for Pasadena Transit and the first ZEB for Pasadena Dial-A-Ride. The objective of these first buses would be to gain operational experience with the technologies to prepare for future vehicle replacements. In addition, the City of Pasadena Transit Fleet Replacement Plan included in the Rollout Plan (Attachment B) was updated to incorporate an accelerated transition as funding becomes available. There are some upcoming local, state and federal competitive grant funding opportunities that staff will be pursuing to advance implementation of the ZEB plan.

COUNCIL POLICY CONSIDERATION:

The proposed action is consistent with the following goals of the Strategic Plan: Improve, Maintain and Enhance Public Facilities and Infrastructure; Increase Conservation and Sustainability; and Improve Mobility and Accessibility throughout the City. The Rollout Plan will provide the road map to assist the Department of Transportation in implementing a zero emission transit fleet while following two objectives of the Mobility Element: to promote a livable community and encourage non-auto travel.

ENVIRONMENTAL ANALYSIS:

The project has been reviewed for compliance with the California Environmental Quality Act (CEQA) and is exempt per Section 15061 (b) (3). The project is covered by the general rule that CEQA only applies to projects that have the potential for causing a significant effect on the environment. The Rollout Plan provides a road map to transition the fleet from fossil fuel to a zero emission propulsion.

FISCAL IMPACT:

There are no costs associated with this action. Staff will return at the point vehicles or infrastructure are being procured, at which time the fiscal impact of each procurement will be known.

Respectfully submitted,



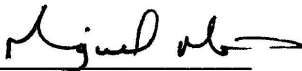
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Attachments (2):

- Attachment A - Pasadena Zero Emission Bus Rollout Plan (Rollout Plan)
- Attachment B - City of Pasadena Transit Fleet Replacement Plan