



Staff Report

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**File #:** 23-0198

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**REQUEST FOR CITY COUNCIL ACTION**

**DATE:** 03/15/2023

**TO:** Honorable Mayor and City Council Members

**FROM:** Community Services Department

**SUBJECT:**

APPROVAL OF FUEL SOURCE TECHNOLOGY FOR CITY OF CORONA TRANSIT SERVICE ZERO-EMISSION BUS ROLLOUT PLAN

**EXECUTIVE SUMMARY:**

This staff report asks the City Council to select a zero-emission fuel source technology in compliance with the Innovative Clean Transit regulation adopted by the California Air Resources Board. On February 15, 2023, staff presented an overview of the Zero-Emission Bus Rollout Plan requirements, provided Council and the public a full copy of the associated analyses, and requested to return on March 15, 2023 for final discussion and selection of a zero-emission bus fuel technology.

**RECOMMENDED ACTION:**

**That the City Council** approve the mixed-fleet fuel source technology as the recommended technology in the development of the City of Corona Transit Service Zero-Emission Bus Plan.

**BACKGROUND & HISTORY:**

The California Air Resources Board (CARB) adopted the Innovative Clean Transit (ICT) regulation in December 2018. Per the regulation, all public transit agencies are required to gradually transition to a 100-percent zero-emission fleet by 2040. This goal is to be achieved through the purchase of new zero-emission buses (ZEB) in accordance with the purchasing rules, shown in the table below. Between 2026 and 2028, 25% of annual bus purchases must comply with zero-emission technology. Starting in 2029, 100% of fleet purchases must be zero-emission. Based on the current procurement schedule, two (2) busses of the scheduled seven (7) bus purchase would need to be compliant with the Federal Transit Administration bus replacement regulations.

Starting January 1	ZEB Percentage of Total New Bus Purchases
2026	25%
2027	25%
2028	25%
2029	100%

The completion of the ZEB rollout plans will allow CARB to assess the financial impacts of the regulation on transit agencies and plan for future funding assistance opportunities to aid all agencies to reach the goal by 2040.

CARB requires the submission of the ZEB rollout plans for small public transit agencies by June 30, 2023. The smaller transit agencies in the Riverside County area approached Riverside County Transportation Commission (RCTC) for assistance in the development of the ZEB Rollout Plans to meet the ICT regulation. The smaller transit agencies include the cities of Corona, Banning, Beaumont, Riverside, and Palo Verde Valley Transit Agency.

RCTC agreed to assist and applied for grant funding from the California Department of Transportation (Caltrans) FY 2021-2022 Sustainable Transportation Planning Grant program under the Sustainable Communities Competitive-Technical category. In June 2021, RCTC secured a Caltrans grant in the amount of \$271,380 to match the \$202,420 in State Transportation Improvement Program Planning, Programming, and Monitoring funds.

On April 13, 2022, RCTC awarded a contract to the Center for Transportation and the Environment (CTE), a 501c-3 nonprofit engineering and planning firm, to develop the ZEB Rollout Plans for the five smaller transit agencies. In addition to each transit agency's ZEB Plan, RCTC will also be preparing a countywide ZEB Financial Strategy to assist the transit operators with implementation. Following the award of the contract, RCTC and CTE, initiated the kickoff meeting with Corona on June 16, 2022, to discuss the key activities and schedule the development of the ZEB Plans.

On February 15, 2023, staff presented the financial analysis and the existing conditions analysis developed by CTE to Council. The informational presentation was provided to allow Council time to process and study the information before the selection of the ZEB technology.

**ANALYSIS:**

Under CARB's ICT regulations, the approved zero-emission fuel technology solutions include battery electric and hydrogen fuel cell. The plan must include several analyzed components to reach the goal of a complete fleet transition to ZEB by 2040. Key components analyzed in the development and preparation of these reports included:

- Review of the existing conditions.

- Relevant demographics
- Service area characteristics
- Existing fleet sizes and conditions
- Preparation of reports based on the findings and conclusions and preferred zero-emission technology option(s).
- Development of a detailed capital and operating financial analysis comparing the purchase of ZEB's to the purchase of existing CNG buses and a long-term implementation strategy report.  
Capital Analysis components include:
  - Purchasing & procurement schedule with efforts to avoid early retirement of conventional CNG buses.
  - A schedule and location for ZEB facilities and infrastructure.
  - Training plan and schedule for ZEB operators, maintenance, and repair staff.Financial Analysis components include:
  - Fleet costs
  - Fuel costs
  - Maintenance costs
  - Preliminary infrastructure projects & costs
  - Total cost of Ownership
  - Identification of potential funding sources.
- Benefits and drawback of each technology, i.e., battery electric and hydrogen cell fuel.

#### Corona Existing Conditions and Financial Report Summary

CTE was informed that the City is undergoing a Comprehensive Operations Analysis and looking to overhaul routes and service. However, to right-size a ZEB transition to the City's service conditions, CTE was required to study the City's conditions under existing service routes. A subsequent analysis will need to be conducted after the City transitions to its new transit services and routes.

Below is a summary of findings based CTE's analysis specific to Corona's existing transit services and conditions, i.e., existing Blue and Redline routes, relevant demographics, service area characteristics, existing fleet sizes and conditions, location and status of charging and maintenance infrastructure and financial impacts of each. A full copy of the existing condition analysis and financial analysis reports is attached to this staff report.

#### Battery Electric Buses (BEB)

- Fueling time longer than CNG (internal combustion engine (ICE) bus.
- Fuel cost highly variable and could be higher or lower than fossil fuels.
- BEB buses cost approximately 50% more than ICE buses.
- Infrastructure costs increase per bus when scaled-up.
- No additional land needed for infrastructure (per staff assessment)

#### Fuel Cell Electric Buses (aka hydrogen fuel)

- Comparable range to ICE bus - 1:1 replacement ratio.
- Fueling time comparable to ICE bus.

- Fuel cost significantly higher than fossil fuel.
- Buses cost significantly more than ICE buses.
- High infrastructure costs that have efficiencies of scale with increased fleet size.
- Greater resilience.
- Land acquisition unknown (not analyzed by CTE as part of this report).

Based on the results of the assessment, staff recommends pursuing a mixed-fleet fuel source option to include both technologies. A mixed fleet option will provide greater redundancy and resilience benefits and less reliance on just one source of fuel supply during grid-down or fuel supply shortage scenarios. Based on the purchasing mandate, 25% of the next bus purchase in 2028 must be zero-emission. Therefore, the city can pursue the first bus purchase requirement of two buses with the more familiar widely used technology of battery electric while continuing to explore the hydrogen fuel technology and allowing it to continue to mature and develop. The ZEB plans are a living document that are meant to be revisited as the market matures, therefore, the City can at any time, reassess to determine the technology that best meets both ICT and the City’s requirements.

Schedule and Timing

To meet the ICT submission deadline, the following timeline has been scheduled to develop and submit the Corona Transit ZEB Plans:

Tasks	Task Due	Status
#1 Development of Existing Conditions Report	October 2022	Completed
#2 Presentation to City Council to introduce matter, report on existing conditions and technologies available	February 2023	Completed
#3 Council selection of zero-emission bus technology	March 2023	On track for council approval on March 15, 2023
#4 Council approval of the ZEB Plan based on bus technology approved by City Council on 3/15/23	June 2023	On track for council approval on June 7, 2023
#5 City submittal of ZEB Rollout Plan to CARB	June 2023	On track to submit June 30, 2023

The consultant will develop the City’s ZEB Rollout Plan based on Council direction. Staff will present this plan to the Council at the June 7, 2023, meeting and will request that the Council pass a Resolution which adopts the plan. The Resolution and ZEB Rollout Plan must be submitted to CARB by June 30, 2023.

Staff Recommendation

Staff recommends approval of mixed-fleet fuel technology for the City of Corona Transit Service fleet.

**FINANCIAL IMPACT:**

There is no fiscal impact at this time for the selection of a zero-emission fuel technology and development of the Zero-emission Bus Rollout and Implementation Plan. A funding plan for implementation of zero-emission buses and equipment will be developed and included in future budgets through the annual Short-Range Transit Plans.

**ENVIRONMENTAL ANALYSIS:**

This action is exempt pursuant to Section 15061(b)(3) of the Guidelines for the California Environmental Quality Act (CEQA), which states that a project is exempt from CEQA if the activity is covered by the commonsense exemption that CEQA applies only to projects that have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA. This action merely approves the selection of the Zero Emission Bus technology. There is no possibility that this action will have a significant effect on the environment. Therefore, no environmental analysis is required.

**PREPARED BY:** SUDESH PAUL, TRANSIT PROGRAM MANAGER AND CYNTHIA LARA, COMMUNITY ASSISTANCE MANAGER

**REVIEWED BY:** ANNE K. TURNER, COMMUNITY SERVICES DIRECTOR

**Attachments:**

1. Exhibit 1 - City of Corona Transit Service Existing Conditions Report
2. Exhibit 2 - City of Corona Zero-Emission Transition Financial Analysis