



Special Transportation's Zero Emissions Transition

Parks, Recreation, and Community Services Department
City Council Meeting
June 20, 2023



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CARB ICT Rollout Plan Requirements



ZEB Rollout Plans must include:

- A goal of a complete fleet transition to zero-emission buses by 2040
- Avoiding early retirement of conventional ICE buses
- Identification of the types of zero-emission bus technologies
- A purchasing schedule
- Location details for ZEB facilities and a schedule of infrastructure operations
- A Disadvantaged Communities Service Plan
- A Training plan and schedule for ZEB operators, maintenance, and repair staff
- Identification of potential funding sources



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Financial Analysis Overview



Financial impacts of ZEB technology transition for the City of Riverside's Riverside Connect include:

- Fleet Capital Cost
- Fuel Costs
- Maintenance Costs
- Preliminary Infrastructure Projects & Costs
- Total Cost of Ownership



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Analysis Process

	Existing Conditions Report	Financial Strategy Analysis	ICT Rollout Plan
Purpose	Establishes baseline for service transition	Demonstrates the expected cost of the zero-emission transition for BEB fleet, FCEB fleet and Mixed Fleet	<ul style="list-style-type: none"> • High-level plan • Developed based on one scenario selected from Transition Plan • Public plan • FTA transition plan compliant for grant use
Methodology	CTE Service Energy Assessment	CTE Transition Plan Methodology: Fleet, Fuel, Maintenance, Infrastructure and Total Cost of Ownership	<ul style="list-style-type: none"> • Summary of Existing Conditions & Financial Analysis • Extended narrative describing disadvantaged communities, workforce training, and potential funding sources
Update Frequency	As needed for large service changes	As needed for financial planning	Submitted once to comply with CARB regulation

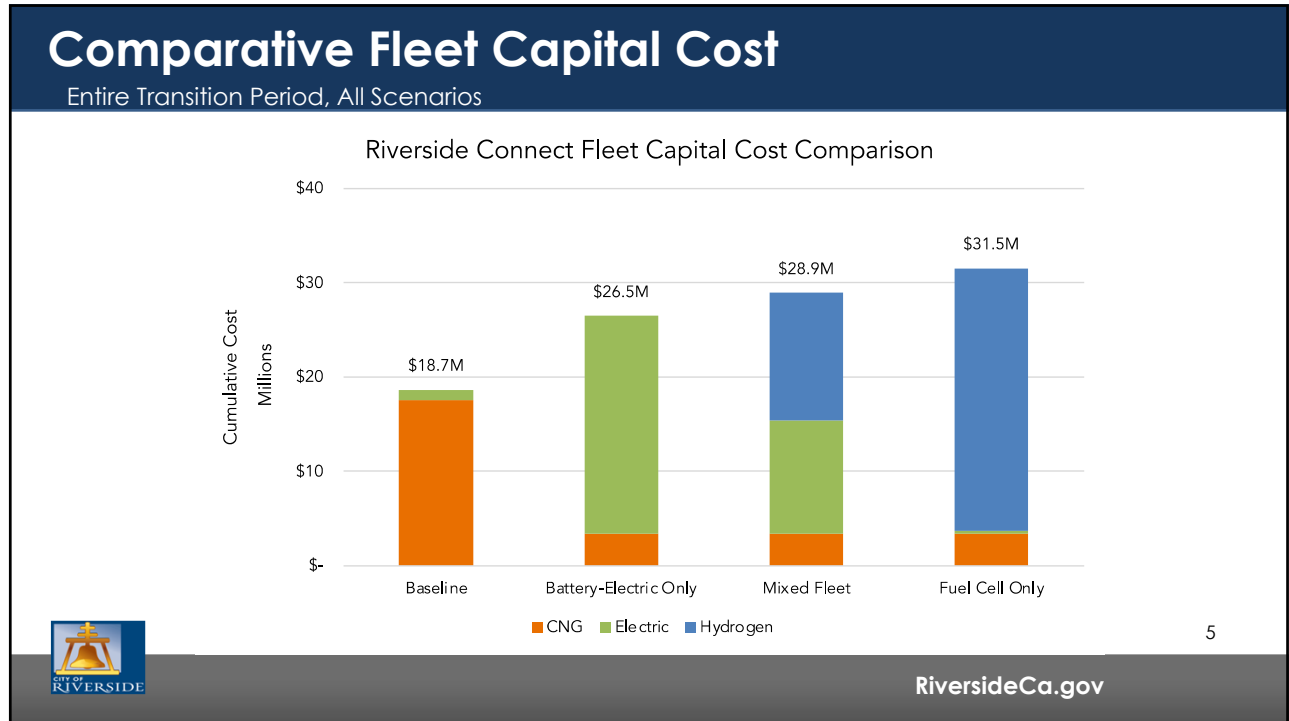
A draft of the Zero Emissions Buses (ZEB) Rollout Plan has already been created.



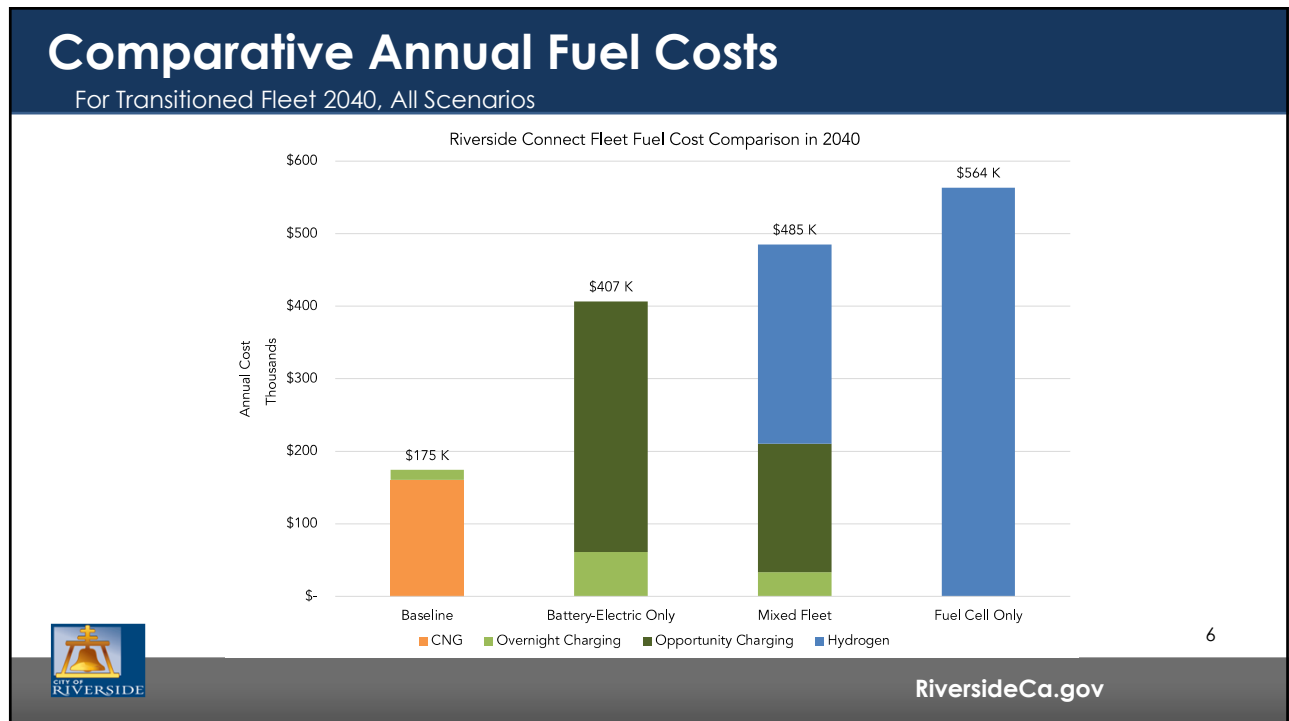
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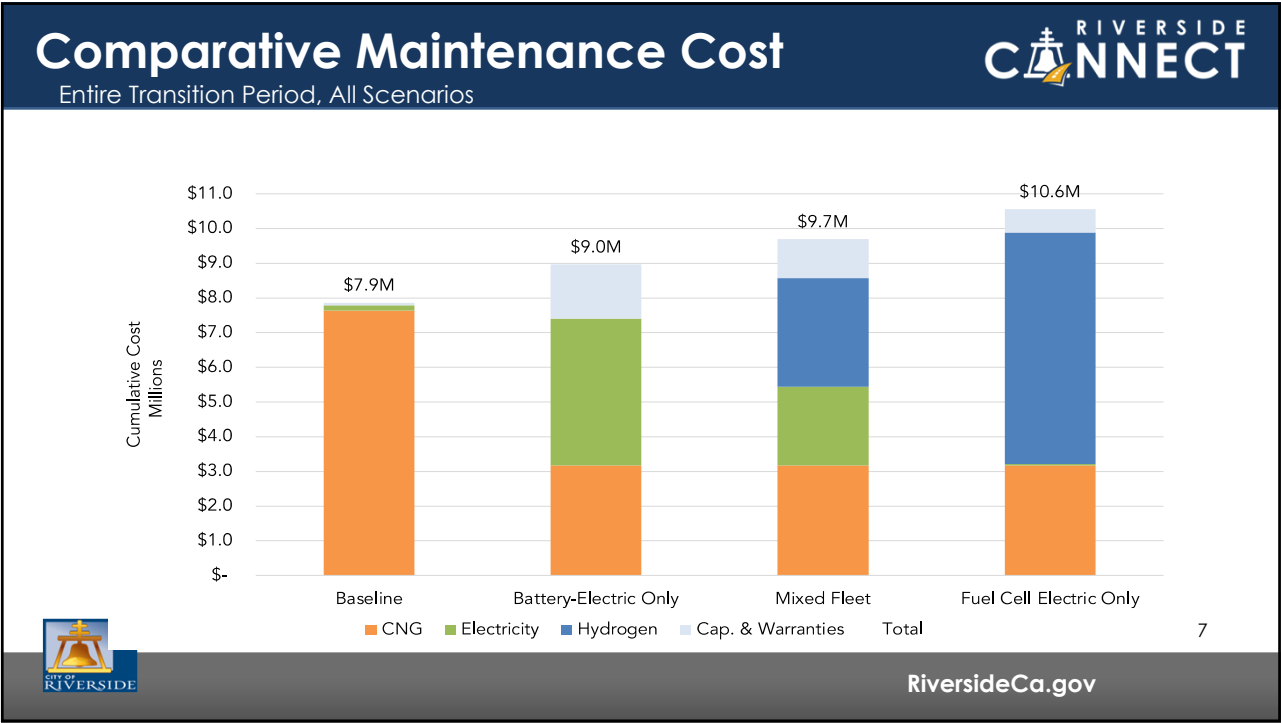
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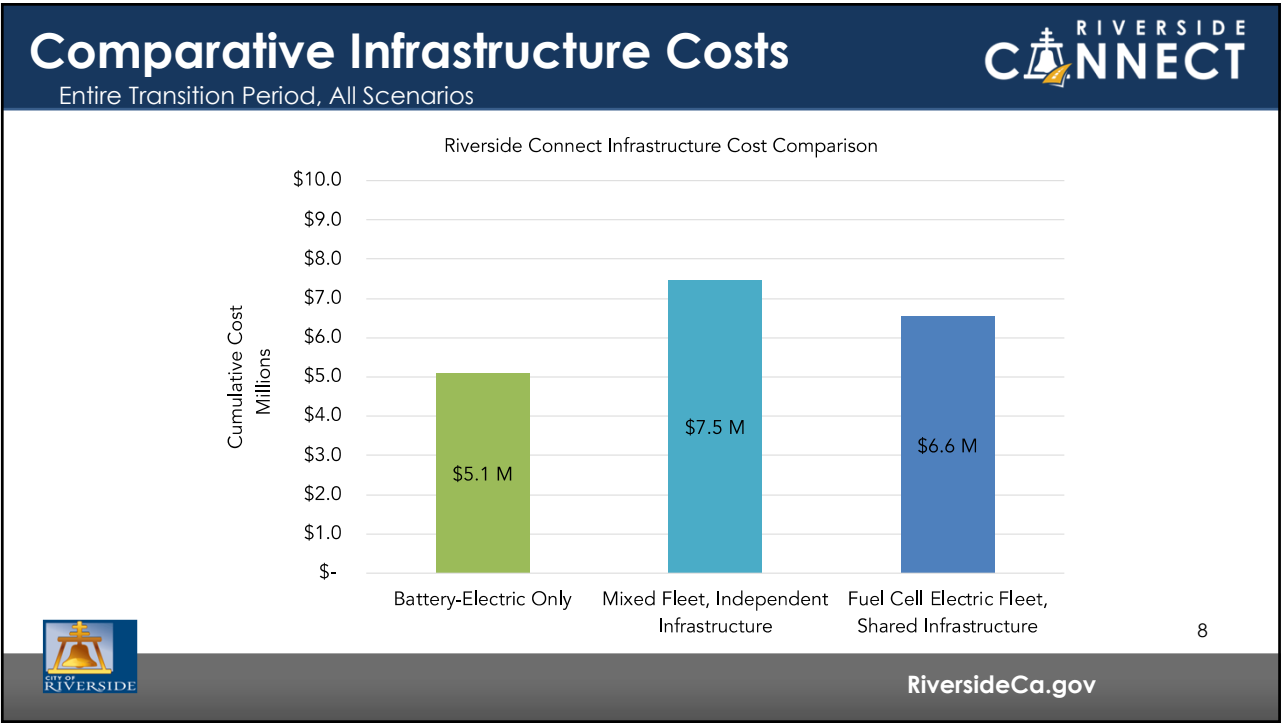
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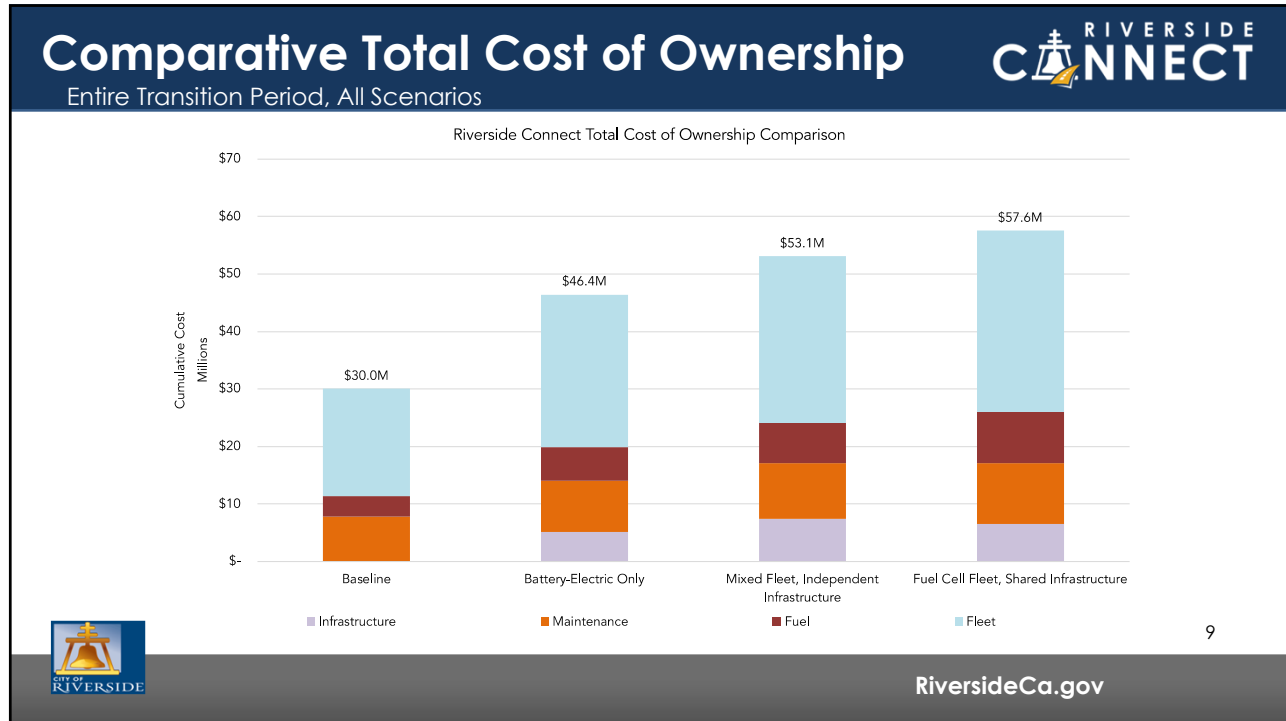
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Other Considerations


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- These analyses are based on the Existing Conditions Report published in October 2022.
- Transition plans are living documents that are meant to be revisited as the market matures.
- Prices used in the analysis are a snapshot of today's market, while they are evidence-based predictions, the hydrogen market is nascent and will likely see large pricing drops with increased supply and commercialization.

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What Are Local Partners Doing?






Riverside Transit Agency – Fuel Cell Electric per submitted ICT Rollout




SunLine Transit Agency – Fuel Cell Electric per submitted ICT Rollout




OmniTrans – Battery Electric per submitted ICT Rollout


OmniTrans is now implementing a mixed fleet solution including **Fuel Cell Electric Buses**



City of Corona – Recommending a mixed fleet solution to City Council.




Cities of **Banning**, **Beaumont**, and **PVVTA** are in the process of reviewing options for ICT Rollouts developed in concurrence with the **City of Riverside**.




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Justification for Mixed Fleet



BEB Fleet	Mixed Fleet	FCEB Fleet
<ul style="list-style-type: none"> Battery electric cutaways are not capable of meeting Riverside Connect's daily service requirements on a single charge, so midday opportunity charging is utilized on DAR service to sustain energy on-board. 	<ul style="list-style-type: none"> Multiple technologies provide greater redundancy and resilience benefits; less reliant on the grid or fuel supply. Flexibility to adopt whichever Zero Emissions Propulsion Technology the City of Riverside decides to adopt in the future. 	<ul style="list-style-type: none"> Operationally similar to current fleet. Despite this benefit, the cost of fuel cell cutaways and hydrogen fuel are still more expensive than battery electric cutaways and electricity at current market prices.



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Next Steps for Zero-Emission Transition



Staff Recommendation – Mixed Fleet Bus Fuel Technology (Tonight's Meeting 6/20/2023)

Receive City Council Approval of Final ICT Rollout Plan for submission to CARB (June 30, 2023)

RCTC staff to compile ZEB rollouts for all operators to develop a countywide Financial Strategy for future funding and implementation – July to October 2023

Incorporate necessary changes into the proceeding Short Range Transit Plans

Questions ?



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Recommendations



That the City Council:

1. Approve the mixed-fleet transition scenario as the recommended zero-emission transition strategy for the development of the City of Riverside Connect Zero-Emission Bus Rollout Plan;
2. Approve the ICT Zero-Emission Bus Rollout Plan for submission to CARB by June 30, 2023; and
3. Adopt a Resolution of the City of Riverside authorizing the submission of the Zero-Emission Bus Rollout Plan to the California Air Resources Board as required by the Innovative Clean Transit (ICT) regulation.



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