



FTA Zero-Emission Fleet Transition Plan Guide



How to Adapt your CARB Zero Emission Bus Rollout Plan to comply with FTA Requirements





Prepared by the Fresno County Rural Transit Agency and Walker Consultants with Funding from the California Department of Transportation and the Federal Transit Administration



FTA Zero-Emission Fleet Transition Plan Guide

The Bipartisan Infrastructure Law 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 a requirement that any application for projects related to zero-emission vehicles include a **Zero-Emission Transition Plan**. The Federal Transit Administration (FTA) Zero-Emission Fleet Transition Plan has six required elements:¹

-  1) Demonstrate a long-term fleet management plan with a strategy for how the applicant intends to use the current application and future acquisitions.
-  2) Address the availability of current and future resources to meet costs for the transition and implementation.

-  3) Consider policy and legislation impacting relevant technologies.
-  4) Include an evaluation of existing and future facilities and their relationship to the technology transition.
-  5) Describe the partnership of the applicant with the utility or alternative fuel provider.
-  6) Examine the impact of the transition on the applicant's current workforce by identifying skill gaps, training needs, and retraining needs of the existing workers of the applicant to operate and maintain zero-emission vehicles and related infrastructure and avoid displacement of the existing workforce.

The State of California's Innovative Clean Transit (ICT) regulation was enacted on October 1, 2019. It requires that all public transit agencies gradually transition their fleets to zero-emission technologies. Starting in 2029, 100 percent of all transit agencies' new bus purchases must be Zero Emission Buses (ZEBs), with a goal of complete transition to ZEBs by 2040. The ICT regulation requires each transit agency to prepare a ZEB Rollout Plan, which should have been submitted by July 1, 2023. The California Air Resource Board (CARB) issued the ZEB Rollout Plan Guidance for Transit Agencies ("**CARB ZEB Rollout Plan Guidance**"), last updated on January 9, 2020, which provided California transit agencies with a template for preparing these plans.

A completed **CARB ZEB Rollout Plan** has many of the same components required by the FTA

Zero-Emission Fleet Transition Plan. California transit agencies can use their CARB ZEB Rollout Plan as a starting point to satisfy the FTA requirements, with additional information in a cover letter or addendum. This additional information includes identifying where the CARB plan answers the six FTA-required elements and/or adds any missing elements.

Agencies can use the **FTA Zero-Emissions Fleet Transit Plan Template** (provided under separate cover) and this accompanying **FTA Zero-Emission Fleet Transition Guide** to produce a cover letter/addendum to their CARB ZEB Rollout Plan to fulfill FTA's requirements.

This guide is intended for California public transit agencies that have an approved CARB ZEB Rollout Plan.

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Glossary of Terms

CARB ZEB Rollout Plan – Per ICT, transit agencies are required to prepare a Zero Emission Bus Rollout Plan to be approved by the California Air Resources Board (CARB).

CARB ZEB Rollout Plan Guidance – CARB’s guidance document, last updated January 9, 2020, for transit agencies to use for preparation of a CARB ZEB Rollout Plan.

FTA Zero Emission Fleet Transition Plan – A Fleet Transition Plan is required per the Bipartisan Infrastructure Law to receive funding from the Grants for Buses and Bus Facilities Competitive Program (5339(b)) or the Low or No Emission Program (5339(c)).

FTA Zero-Emission Fleet Transition Plan Template – Template that agencies can use to produce a cover letter/addendum to their CARB ZEB Rollout Plan to fulfill FTA’s requirements.

Grants for Bus and Bus Facilities Competitive Program 5339(b)

– Makes federal resources available to states and direct recipients to replace, rehabilitate, and purchase buses and related equipment and to construct bus-related facilities, including technological changes or innovations to modify low or no emission vehicles or facilities.

ICT – State of California’s Innovative Clean Transit regulation which requires transit agencies to prepare a CARB ZEB Rollout Plan.

Low or No Emission Grant Program 5339 (c)

– Provides funding to state and local government authorities for the purchase or lease of zero-emission and low-emission transit buses and the acquisition, construction, and leasing of required supporting facilities.

ZEB – Zero Emission Bus

How to Use This Guide

Use this **FTA Zero-Emission Fleet Transition Guide** to help fill out the **FTA Zero-Emission Fleet Transition Plan Template**. (provided under separate cover) The guide is organized by FTA-required Zero Emission Transition Plan element and includes the following information:



An overview of what the FTA is asking for and FTA guidance on each Zero-Emission Transition Plan element.



Where to find the required information in your CARB ZEB Rollout Plan.



How to address the FTA required element, referencing your CARB ZEB Rollout Plan, as applicable.



Addendum/cover letter language using examples from the FTA-approved Fresno County Rural Transit Agency (FCRTA) Zero Emission Fleet Transition Plan.



Reference to the applicable section of the CARB ZEB Rollout Plan Guidance document.

FTA Zero-Emission Fleet Transition Plan Guide



FTA Element 1 – Demonstrate a long-term fleet management plan with a strategy for how the applicant intends to use the current request for resources and future acquisitions.

What is FTA Asking?



FTA wants to understand how your grant request will be used to implement your long-term fleet management plan. FTA indicated that some examples to address this element include the following:²

- *Include excerpt or describe how the long-term fleet management plan aligns with the zero-emission grant application.*
- *Describe how the procurement plan aligns with the zero-emission grant application.*

Where to Find This Information in Your CARB ZEB Rollout Plan



An approved CARB ZEB Rollout Plan should contain the transit agency's long-term fleet management plan/bus procurement plan, specifically the following tables in **Section D: Current Bus Fleet Composition and Future Bus Purchases**:

- [Table 2](#): Future Bus Purchases details when ZEBs will be purchased and the types of ZEBs to be purchased.
- [Table 4a](#): Schedule of Converting Conventional Buses to Zero-Emission Buses illustrates the timeline for conversion of conventional buses to ZEBs.

How to Address the FTA-Required Element



Include a statement referencing the tables from **Section D** of your CARB ZEB Rollout Plan and note how the FTA funding you are applying for will be used to support your transition plan. Examples include:

- If you are applying for funding to purchase ZEBs, reference the purchase year and vehicle/fuel type of the vehicle to be replaced, as listed in your CARB ZEB Rollout Plan, [Table 2](#) and [Table 4a](#).
- If you are applying for FTA funding to purchase and install EV charging stations, reference the vehicles listed in your CARB ZEB Rollout Plan [Table 2](#) and [Table 4a](#) that will use the EV charging stations.

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FTA Element 1 – Demonstrate a long-term fleet management plan with a strategy for how the applicant intends to use the current request for resources and future acquisitions.

Example FTA Addendum/Cover Letter



Fresno County Rural Transit Agency (FCRTA)'s CARB ZEB Rollout Plan includes the agency's long-term fleet management plan in Section D, Current Bus Fleet Composition, and Future Bus Purchases. Section D includes Table 2 detailing future bus purchases and Table 4a detailing the schedule of converting conventional buses to zero-emission buses on pages 10 and 11, respectively.

FCRTA is requesting FTA funding to implement Phase II of its Selma Maintenance Facility project, which includes plans for a solar field, solar carport, Level 2 charging equipment, and inductive charging. This project will allow FCRTA to charge its 80 30-foot battery electric buses and electric passenger vans that will be purchased and deployed incrementally between 2023 and 2030. These vehicles will replace its 80 CNG and gasoline buses.



CARB ZEB Rollout Plan Guidance³

Page 8-9 of the CARB ZEB Rollout Plan Guidance includes the requirements for [Table 2](#) and [Table 4a](#).

Table 2: Future Bus Purchases (Required)

Time-line (Year)	Total # of Buses to Purchase	Number of ZEB Purchases	% of Annual ZEB Purchases	ZEB Bus Type(s)	ZEB Fuel Type(s)	Number of Conv. Bus Purchases	% of Annual Conv. Bus Purchases	Type(s) of Conv. Buses	Fuel Type(s) of Conv. Buses

Table 4a: Schedule of Converting Conventional Buses to Zero-Emission Buses (Required)

Timeline (Year)	Number of Buses	Bus Type(s)	Removed Propulsion System	New Propulsion System

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FTA Element 2 – Address the availability of current and future resources to meet costs for the transition and implementation.

What is FTA Asking?



FTA wants to understand how you are working toward funding the fleet transition, including available and potential future funding sources. FTA indicated that some examples to address this element include the following:²

- Provide an overview of current funding levels and sources and how that will support/impact the transition.
- Describe planning or other efforts underway to secure additional resources.

Where to Find This Information in Your CARB ZEB Rollout Plan



An approved CARB ZEB Rollout Plan should contain information that addresses this element, specifically [Section H: Potential Funding Sources](#).

How to Address the FTA-Required Element



Reference the list of potential funding sources from [Section H: Potential Funding Sources](#) of your CARB ZEB Rollout Plan. If funding sources are not included in [Section H](#) of your CARB ZEB Rollout Plan, list current and/or future funding amounts, where available, for each funding source listed.

Example Funding Sources

Federal

Low or No Emission Vehicle Program
Grants for Bus and Bus Facilities
VW Mitigation Trust
Charging and Fueling Infrastructure Grants

State

Transit and Intercity Rail Capital Program (TIRCP)
Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)
CEC Clean Transportation Program
Clean Mobility Options (CMO)

Local

County sales tax funding for transportation
Local utility incentive programs
Local Air District funding
Regional Metropolitan Planning Organization funding

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FTA Element 2 – Address the availability of current and future resources to meet costs for the transition and implementation.

Example FTA Addendum/Cover Letter

FCRTA will pursue a mix of funding sources to fund its zero-emission vehicle transition. FCRTA’s CARB ZEB Rollout Plan Section H on pages 21-22 includes a list of potential funding sources the agency will utilize. This addendum includes funding amounts for each of the funding sources listed in Section H, where available:

Low or No Emissions Vehicle Program 5339 (c) – \$1,225,000 in FY2024, \$1,127,000 in FY2025, and \$1,128,000 in FY2026

Low Carbon Transit Operations Program (LCTOP) – \$560,000 per FCRTA’s 2022-2023 Capital Reserve Budget.

Local Measure C – \$1,827,510 per FCRTA’s 2022-2023 Capital Reserve Budget.

Affordable Housing and Sustainable Communities Program (AHSC) – \$750M for Round 7 funding.

Transit and Intercity Rail Capital Program (TIRCP) – no active funding opportunities.

Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) – \$109M in funds for transit vehicles remain. Voucher awards range from \$45,000 to \$120,000 per vehicle, depending on vehicle type.

VW Mitigation Trust – \$67M is available for zero-emission transit, school, and shuttle buses. The incentive amount is up to \$400,000 per vehicle.

PG&E EV Fleet Program – Transit buses and Class 8 vehicles are eligible for up to a \$9,000 incentive, and chargers are eligible for a rebate of up to 50% of the cost of the charger.

San Joaquin Valley Incentive Project – \$507,406 funds remaining for Level 2 charging stations. Up to \$4,000 per connector rebates are available. For DC fast charging, rebates are available up to 50% of a project’s total costs, with a maximum of \$100,000 per active connector.



CARB ZEB Rollout Plan Guidance³



Page 15 of the CARB ZEB Rollout Plan Guidance requires the following information to complete Section H Potential Funding Sources.

Please identify all potential funding sources your transit agency expects to use to acquire zero-emission technologies (both vehicles and infrastructure).

Table 9: Potential Funding Sources (Optional)

Timeline (Year)	Name of Funding Source	How Each Fund is Planned to be Used	Estimated Amount (s) of Each Funding Source	# of ZEBs to Purchase or Maintain, or Type(s) of Infrastructure to Install or Upgrade

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FTA Element 3 – Consider policy and legislation impacting relevant technologies.


What is FTA Asking?



FTA wants to understand how existing State/local policies and legislation may impact your zero-emission fleet transition. FTA indicated that some examples to address this element include the following:²

- *Listing of any state or local policies or legislation that support or hinder the implementation of relevant technology the applicant is looking to implement.*
- *Analysis of future policy or legislation that the agency is considering that will support the implementation.*


Where to Find This Information in Your CARB ZEB Rollout Plan



This is required only by FTA. The CARB ZEB Rollout Plan Guidance does not include any specific requirements for agencies to discuss policy and legislation impacting zero-emission vehicle technology.

How to Address the FTA-Required Element

Provide a list of policies and legislation at the State, local, and agency levels that support zero-emission vehicle deployment. Sources to consider when identifying policies include:

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- Examples of State policies are included in the Example Addendum/Cover Letter language on Page 8.
 - For local policies, review your Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).
 - For agency-level policies, consult your short- and long-range transit plans . If your agency has established a target year to transition to zero-emission vehicles, indicate that in this section. Consider revising any policies that hinder zero-emission vehicle transition.

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FTA Element 3 – Consider policy and legislation impacting relevant technologies.

Example FTA Addendum/Cover Letter

Many policies and pieces of legislation have been passed at the state and local levels that support the implementation of zero-emission vehicle technology. FCRTA has also established policies that support its zero-emission vehicle transition. The following lists a sample of goals, policies, and actions at the State, local, and agency level:

State policies – The following State policies/legislation support the transition to a zero-emissions vehicle fleet:

- In 2019, the Innovative Clean Transit (ICT) regulation, which is implemented by the California Air Resources Board, states that starting in 2029, public agencies will be limited to the purchase of zero-emission buses only, with a goal of complete transition to zero-emission buses by 2040.
- The California Transportation Plan (CTP) 2050 Recommendation Element 8 “Advance zero-emission (ZEV) Technology and Supporting Infrastructure.”
- The California State Transportation Agency (CalSTA) Climate Action Plan for Transportation Infrastructure (CAPTI) Framework (adopted July 12, 2021) in a Rural Context Action “Deploying zero-emission vehicle charging or fueling infrastructure – including for battery electric, fuel cell (hydrogen) electric, and other zero-emission vehicle technologies.”
- California Department of Transportation (Caltrans) 2020–2024 Strategic Plan goal to “Lead climate action” by implementing the stated mitigation to “Reduce greenhouse gas emissions from the transportation sector.”
- California Air Resources Board Advanced Clean Cars II rule (adopted in 2022) establishes a year-by-year roadmap so that by 2035, 100% of new cars and light trucks sold in California will be zero-emissions vehicles, including plug-in hybrid electric vehicles.

Local policies – The following local policies support and/or hinder the transition to a zero-emission vehicle fleet:

- The 2022 Fresno Council of Governments (FCOG) Regional Transportation Plan/Sustainable Communities Strategy Policy 10 “Incentivize and support efforts to improve air quality and minimize pollutants from transportation.”

Agency policies – FCRTA has implemented the following policies to support the transition to a zero-emission vehicle fleet:

- FCRTA has a goal to convert to a 100% percent zero-emission fleet by 2030.
- Fleet electrification has been identified as a priority in FCRTA’s Short-Range Transit Plan 2022–2026 and the Fresno County Regional Long-Range Transit Plan 2019–2050.

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FTA Element 4 – Include an evaluation of existing and future facilities and their relationship to the technology transition.

What is FTA Asking?



FTA wants to understand the ability of your current and future facilities to accommodate your zero-emission vehicle fleet, and whether any facility upgrades are necessary. FTA indicated that some examples to address this element include the following:²

- *Capital inventory relevant to fleet transition that includes information on the state of existing facilities and the scope and timing for future upgrades and/or expansion.*
- *Analysis of existing facilities relevant to fleet transition and their ability to integrate relevant technology for current and future acquisitions.*

Where to Find This Information in Your CARB ZEB Rollout Plan



An approved CARB ZEB Rollout Plan should address Element 4, specifically Section E: Facilities and Infrastructure Modifications, [Table 5: Facilities Information and Construction Timeline](#).

How to Address the FTA-Required Element



Include a statement referencing [Table 5](#) from Section E of your CARB ZEB Rollout Plan and note that the facilities and infrastructure modifications have been identified to support the transition to a zero-emissions vehicle fleet.

Example FTA Addendum/Cover Letter



FCRTA's CARB ZEB Rollout Plan Section E: Facilities and Infrastructure Modifications [Table 5](#) on pages 13 through 15 includes the facilities and infrastructure modifications the agency needs to support its transition to a zero-emission vehicle fleet.

CARB ZEB Rollout Plan Guidance³



[Page 11](#) of the CARB ZEB Rollout Plan Guidance includes [Table 5](#) Facilities Information and Construction Timeline.

Table 5: Facilities Information and Construction Timeline (Required)

Division Facility/Name	Address	Main Function(s)	Type(s) of Infrastructure	Service Capacity	Needs Upgrade? (Yes/No)	Estimated Construction Timeline

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FTA Element 5 – Describe the partnership of the applicant with the utility or alternative fuel provider.

What is FTA Asking?



FTA wants to understand how you coordinate with your utility or alternative fuel provider for your zero-emission fleet transition. FTA indicated that some examples to address this element include the following:²

- *Letters of support, contact information, communications, etc., with the fuel/energy provider.*
- *Analysis of ongoing coordination with providers and plans for integration/cooperation.*
- *Identification that based on the size of the vehicle fleet, no partnership is needed.*

Where to Find This Information in Your CARB ZEB Rollout Plan



This is required only by FTA. The CARB ZEB Rollout Plan Guidance does not include any specific requirements for agencies to discuss their partnership with the utility or alternative fuel provider.

How to Address the FTA-Required Element

Include one or more of the following:

- Letter of support from the utility or alternative fuel provider for the FTA funding the transit agency is applying for.
- Examples of the partnership between the utility provider and transit agency, such as:
 - ◇ Past projects where you have worked with the utility/alternative fuel provider to install infrastructure.
 - ◇ Planning efforts where the utility/alternative fuel provider participated in your project advisory committee.
 - ◇ Coordination with utility provider to identify electrical grid capacity and to identify electrical infrastructure upgrades necessary.
 - ◇ Resiliency planning efforts with the utility/alternative fuel provider.
 - ◇ Coordination meetings and/or communications with the utility/alternative fuel provider.
 - ◇ Coordination between the utility/alternative fuel provider on charge/fueling rates.
- Identification of any incentive programs offered by the utility or alternative fuel provider, and programs the transit agency participates in.



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FTA Element 5 – Describe the partnership of the applicant with the utility or alternative fuel provider.

Example FTA Addendum/Cover Letter

The utility provider in FCRTA’s service area is Pacific Gas & Electric Company (PG&E) and Southern California Edison (SCE). PG&E covers 8,079 square miles (86%) of Fresno County, while SCE covers the remaining 1,300 square miles of the County (14%). FCRTA has an established partnership with PG&E, which is demonstrated as follows:

- FCRTA partners with PG&E on infrastructure projects, including its Selma Maintenance Facility project, which includes installation of EV charging stations.
- FCRTA partnered with PG&E to produce an Electrical Grid Analysis Plan, which identifies locations where increased electrical capacity is necessary to accommodate peak demand from the transit agency.
- PG&E has an incentive program called the EV Fleet Program that FCRTA participates in. The incentive program is for EV fleet and charging infrastructure. Rebate amounts vary based on vehicle type and charging equipment type. PG&E constructs, owns, and maintains all electrical infrastructure from the transformer to the customer’s meter. In select instances, PG&E also covers behind-the-meter infrastructure. Fleet operators design, build, own, operate, and maintain the electrical infrastructure from the customer meter to the EV charger.
- PG&E is invited to serve on the project advisory committee meetings for EV infrastructure-related planning efforts that FCRTA leads.



Electrical Grid Analysis Study
Fresno County Rural Transit Agency

AECOM ENERGEIA MEASURE

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FTA Element 6 – Examine the impact of the transition on the applicant’s current workforce by identifying skill gaps, training needs, and retraining needs of the existing workers of the applicant to operate and maintain zero-emission vehicles and related infrastructure and avoid the displacement of the existing workforce.

What is FTA Asking?



FTA wants to see how you are training your staff to avoid displacing the existing workforce. FTA indicated that some examples to address this element include the following:²

- *Usage of the Workforce Evaluation Tool.*
- *Coordination Efforts with existing employee representation and/or members.*
- *Employee retention and agency workforce planning strategies.*

Where to Find This Information in Your CARB ZEB Rollout Plan



An approved CARB ZEB Rollout Plan should address Element 6 in Section G: Workforce Training.

How to Address the FTA Required Element



Include a statement referencing [Section G: Workforce Training](#) of the CARB ZEB Rollout Plan and note that the training plan is intended to avoid the displacement of the existing workforce.

Example FTA Addendum/Cover Letter



FCRTA’s CARB ZEB Rollout Plan Section G: Workforce Training on pages 19-20 includes FCRTA’s workforce training plan to support its transition to a zero-emission vehicle fleet. The workforce training plan is designed to avoid the displacement of the existing workforce.

CARB ZEB Rollout Plan Guidance³



[Page 14](#) of the CARB ZEB Rollout Plan Guidance includes the requirements for [Section G: Workforce Training](#).

Please describe your transit agency’s plan and schedule for the training of bus operators and maintenance and repair staff on zero-emission bus technologies.

Timeline (Year)	Training Program/ Class	Purpose of Training	Name of Provider	# of Trainees	Trainee’s Positions	Training Hours	Training Frequency	Estimated Costs per Class

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Sources

(1) FTA Dear Colleague Letter dated December 1, 2021

<https://www.transit.dot.gov/regulations-and-programs/dear-colleague-letters/fta-dear-colleague-letter-fleet-transition-plan>

(2) Low or No Emission Vehicle & Grants for Buses and Bus Facilities Competitive Program Webinar. February 2023.

https://www.transit.dot.gov/sites/fta.dot.gov/files/2023-03/FY23-Low-No-Bus-Webinar-Presentation_0.pdf

(3) Zero-Emission Bus Rollout Plan Guidance for Transit Agencies. Last updated January 9, 2020.

https://ww2.arb.ca.gov/sites/default/files/2020-01/UPDATED%20Rollout%20Plan%20Guidance%20Final_2.pdf

Additional Resources

FTA Zero-Emission Fleet Transition Plan Resources:

<https://www.transit.dot.gov/funding/grants/zero-emission-fleet-transition-plan>

FTA Low or No Emission and Grants for Buses and Bus Facilities Competitive Programs FY 2024 Notice of Funding Opportunity and Webinar Links:

<https://www.transit.dot.gov/notices-funding/low-or-no-emission-and-grants-buses-and-bus-facilities-competitive-programs-fy2024>

CARB Innovative Clean Transit Resources:

<https://ww2.arb.ca.gov/our-work/programs/innovative-clean-transit>