

Zero-Emission Bus Rollout Plan



Prepared For:



May 2023

Section A. Transit Agency Information

Lake Transit Authority

Administration:

525 S. Main Street, Ste. G
Ukiah, CA 95482

Operations:

9240 Highway 53
Lower Lake, CA 95457

Air District: Lake County

Total Number of Buses in Annual Maximum Service: 26

Contact Information:

James Sookne
Program Manager
707-263-7868
jsookne@dbcteam.net

Joint Group: Lake Transit Authority is not part of a Joint Group.

Section B. Rollout Plan General Information

Lake Transit Authority (LTA) has a goal to fully transition to zero-emission buses ahead of the 2040 deadline that will avoid early retirement of conventional transit buses. In accordance with the LTA Transit Asset Management Plan, LTA plans to fully transition to 100% zero-emission bus (ZEB) purchases by the 2029 deadline set forth in the ICT regulation.

This plan was prepared by Lake Transit Authority staff and was approved on May 10, 2023. A copy of the board approved resolution is attached in Appendix A.

For any additional information regarding the Rollout Plan, please contact:

James Sookne
Program Manager, Lake Transit Authority
jsookne@dbcteam.net
707-263-7868

Section C. Technology Portfolio

Lake Transit Authority plans to deploy a combination of battery electric and fuel cell electric buses. The exact composition of the fleet will be determined by an infrastructure and bus analysis to be performed in FY 2023/24.

Section D. Current Bus Fleet Composition and Future Purchase

Existing Bus Fleet

Lake Transit Authority (LTA) operates the following service:

- Local fixed-route service
 - Route 8 in the City of Lakeport
 - Route 10, 11, and 12 in the City of Clearlake
- Dial-A-Ride within the cities of Clearlake and Lakeport; this is a complimentary paratransit service that is available to elderly and disabled passengers and operates in accordance with ADA standards for paratransit service
- Regional fixed-route service
 - Route 1 along the North Shore of Clear Lake between Clearlake and Lakeport
 - Route 2 in the Cobb Mountain Area
 - Route 4 between Clearlake and Lakeport along State Route 29
 - Route 4A along Soda Bay Road on the South Shore of Clear Lake between Kit’s Corner and Lakeport
- Interregional Routes
 - Route 3 between the cities of Clearlake and Calistoga in Napa County
 - Route 7 between Lakeport and Ukiah, in Mendocino County

All services operate Monday through Saturday, except for Routes 2, 4A, and 12, which operate Monday through Friday.

Lake Transit Authority currently has a total of twenty-seven (27) cutaways and three (3) vans. The vans are not required for inclusion in the rollout plan but are described for context. Ten of the cutaways are fueled by gasoline and seventeen are fueled by diesel. The model years for the cutaways range from 2010 to 2020 as seen in Table 1: Individual Bus Information of Current Bus Fleet.

Table 1: Individual Bus Information of Current Bus Fleet

Number of Buses	Engine Model Year	Bus Model Year	Fuel Type	Bus Type
1	2010	2010	Gasoline	Cutaway
1	2013	2013	Diesel	Cutaway
1	2013	2013	Gasoline	Cutaway
5	2014	2014	Diesel	Cutaway
2	2015	2015	Diesel	Cutaway
5	2017	2017	Diesel	Cutaway
8	2017	2017	Gasoline	Cutaway
1	2017	2019	Diesel	Cutaway
3	2020	2020	Diesel	Cutaway

Lake Transit Authority will not be converting any conventional buses to zero-emission buses as shown in **Table 3: Schedule of Converting Buses to Zero-Emission Buses.**

Table 2: Future Bus Purchases (by Delivery Date)

Timeline	Total Number of Buses to Purchase	Number of ZEB Purchases	Percentage of Annual ZEB Purchase	ZEB Bus Type	ZEB Fuel Type	Charging Technology	Number of Conventional Bus Purchase	Percentage of Annual Conventional Bus Purchases	Type(s) of Conventional Buses	Fuel Type(s) of Conventional Buses
2023	5	0	0	N/A	N/A	N/A	5	100	Cutaway	Diesel/Gasoline
2024	4	4	100	Standard	FCEB	N/A	0	0	N/A	N/A
2025	5	0	0	N/A	N/A	N/A	5	100	Cutaway	Diesel/Gasoline
2026	4	1	25	Cutaway	BEB	Plug-in Charging	3	75	Cutaway	Diesel/Gasoline
2027	5	2	40	Cutaway	BEB	Plug-in Charging	3	60	Cutaway	Diesel/Gasoline
2028	4	2	50	Cutaway	BEB	Plug-in Charging	2	50	Cutaway	Diesel/Gasoline
2029	2	2	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2030	5	5	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2031	2	2	100	Cutaway	BEB	Plug-in Charging	0	0	N/A	N/A
2032	5	5	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2033	3	3	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2034	5	5	100	Cutaway	FCEB/ BEB	Plug-in Charging	0	0	N/A	N/A
2035	4	4	100	Cutaway	FCEB/ BEB	Plug-in Charging	0	0	N/A	N/A

2036	6	6	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2037	5	5	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2038	2	2	100	Cutaway	BEB	Plug-in Charging	0	0	N/A	N/A
2039	5	5	100	Cutaway	FCEB	N/A	0	0	N/A	N/A
2040	3	3	100	Cutaway	FCEB	N/A	0	0	N/A	N/A

This table is completed based on the assumption that FCEB Cutaway vehicles will be available for purchase and deployment by 2029. Currently these vehicles are not available so the only FCEB vehicle is a standard full-size bus.

Table 3: Schedule of Converting Conventional Buses to Zero-Emission Buses

Timeline	Number of Buses	Bus Type	Removed Propulsion System	New Propulsion System
N/A	N/A	N/A	N/A	N/A

Section E. Facilities and Infrastructure Modifications

Lake Transit Authority currently has an Operations and Maintenance Facility which houses LTA’s entire fleet (26 buses and 3 vans). The current facility is located at 9240 Hwy 53 in Lower Lake. LTA is also in the process of constructing a new Transit Center to be located on the southwest corner of the intersection of South Center Drive and Dam Road Extension in Clearlake.

The Conceptual Plan for the new Transit Center (**Figure 1**) shows where seven chargers are to be installed, three for transit buses and four for the public. The three for use by transit buses will be used for midday layover charging.

Figure 1: Conceptual Plan for the Transit Center

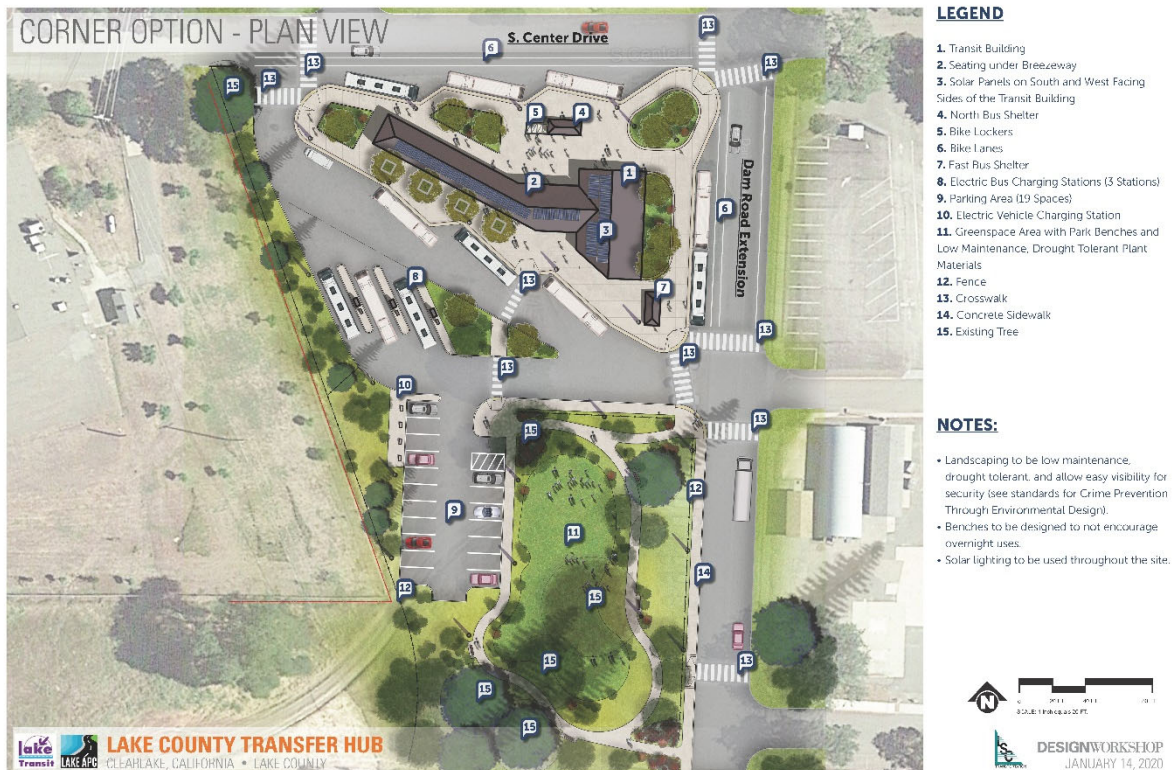


Table 4: Facilities Information and Construction Timeline

Facility Name	Address	Main Function	Types of Infrastructure	Service Capacity	Needs Upgrade (Y/N)	Estimated Construction Timeline
Operations and Maintenance Facility	9240 Hwy 53 Lower Lake, CA 95457	Storage and maintenance of fleet; center of operations	Hydrogen fueling infrastructure and fast chargers will be installed	26 buses and 3 vans	Yes	FY 24/25 and beyond
Transit Center	Intersection of Dam Road and South Center Drive	Transfer center for 6 routes	Fast chargers	11 buses	Yes	FY 24/25

Section F. Service in Disadvantaged Communities

Lake Transit Authority does not serve any disadvantaged communities, as listed in the latest version of CalEnviroScreen.

Section G. Workforce Training

As new FCEBs and BEBs join the fleet, Lake Transit Authority and their operations contractor plan to take advantage of training from the bus manufacturers on operating and maintenance procedures specific to the vehicles. Similarly, training will be provided by equipment suppliers providing hydrogen fueling and battery charging infrastructure. Depending on the specific equipment, training may occur in a “train-the-trainer” format where key staff are training thoroughly on equipment who can pass on basic knowledge to other personnel, or batch training where all or most of the related staff receive instruction from the equipment manufacturer.

Section H. Potential Funding Sources

Pacific Gas and Electric (PG&E) EV Fleet Program

The EV Fleet is a comprehensive program that encompasses incentives and rebates, site design and permitting, construction and activation, and maintenance and upgrades.

California Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)

The Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP) supports deployment of zero-emission and near-zero-emission technologies by facilitating point-of-purchase price reductions. The program is administered by CALSTART on behalf of the California Air Resources Board (CARB).

Low Carbon Fuel Standard (LCFS)

The LCFS program is administered by CARB to help mitigate greenhouse gas emissions. The program focuses on reducing GHG emissions and other toxic air pollutants by improving vehicle technology and supports reducing fuel consumptions while promoting transportation mobility options.

Low or No Emission (Low-No) Grant Program

The Low or No Emission competitive Federal Transit Authority (FTA) grant program supports funding to state and local governments for the purchase or lease of zero-emission and low-emission transit buses. Eligible projects include: (1) purchasing or leasing low- or no-emission buses; (2) acquiring low- or no-emission buses with a leased power source; (3) constructing or leasing facilities and related equipment (including intelligent technology and software) for low- or no-emission buses; (4) constructing new public transportation facilities to accommodate low- or no-emission buses, and/or (5) rehabilitating or improving existing public transportation facilities to accommodate low- or no-emission buses.⁴

In June 2021, the FTA allocated approximately \$192 million in funding for the next program year. In 2020 the program funded 41 projects with a total of approximately \$129 million. Of the 41 projects, the average funding amount was approximately \$3.1 million. The lowest amount awarded was approximately \$300,000 and the largest amount awarded was approximately \$7 million.

Grants for Buses and Bus Facilities Program

The Grants for Buses and Bus Facilities Program is administered by the FTA to replace, rehabilitate, and purchase buses and related equipment to construct bus facilities.

Energy Efficiency and Conservation Block Grant (EECBG)

The EECBG program is administered by the US Department of Energy (DOE) to support and manage projects that improve energy efficiency and decrease energy use and fossil fuel emissions. This program received one-time funding under the American Recovery and Reinvestment Act (ARRA) of 2009. The EECBG program will receive \$550 million through the Infrastructure Investment and Jobs Act for a new round of grants to state and local governments for clean energy investment projects, loan programs, and energy saving performance contracting programs (i.e., budget-neutral approaches to make improvements that reduce energy use and pay for them through future energy savings usage).^{5 6} In the 2009 round of funding, the City of Boston received approximately \$6.5 million toward reducing fossil fuel emissions, reducing total energy use, and improving energy efficiency in the building sector.

The Infrastructure Investment and Jobs Act – Carbon Reduction Program

The newly passed federal Infrastructure Investment and Jobs Act has over \$1 trillion in federal infrastructure investment. The legislation establishes guaranteed funding levels between Fiscal Years 2022/23 and 2026/27 and is not a one-time stimulus. Its focus is to provide a foundation for a long-term surface transportation reauthorization bill. The legislation also includes investments in aviation, EV charging infrastructure, resiliency, and more.

Within the legislation is a Carbon Reduction Program that will distribute approximately \$6.4 billion over five years to states for investment in projects that will help reduce transportation emissions. Eligible projects include transportation electrification, EV charging, public transportation, infrastructure for bicycling and walking, infrastructure that would support congestion pricing, diesel engine retrofits, port electrification and intelligent transportation systems (ITS) improvements. Approximately 65% of this funding would be allocated by population to projects in local communities.⁸

The Infrastructure Investment and Jobs Act – Grants for Charging and Fueling Infrastructure

This grant was established behalf of the Infrastructure Investment and Jobs Act. Approximately \$2.5 billion over five-years start in 2022 to support the deployment of publicly accessible alternative fuel charging infrastructure. This includes EV charging infrastructure, hydrogen fueling, propane fueling, and natural gas fueling infrastructure through 2026.

California Energy Commission Clean Transportation Program

Formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program, this program invests up to \$100 million annually in projects that support adoption of cleaner transportation powered by alternative and renewable fuels. Funding areas include electric vehicles and charging infrastructure, including for public transit buses.

Transit and Intercity Rail Capital Program (TIRCP)

The Transit and Intercity Rail Capital Program (TIRCP) was created to provide grants from the Greenhouse Gas Reduction Fund (GGRF) to help fund capital improvements to modernize California's

intercity rail, bus, ferry, and rail transit systems. The program is focused on the following policy objectives: (1) reduce emissions of greenhouse gases, (2) expand and improve transit service to increased ridership, (3) integrate the rail service of the state's various rail operations, including integration with the high-speed rail system, and (4) improve transit safety.

Clean Mobility Options Voucher Pilot Program

The Clean Mobility Options Voucher Pilot Program (CMO) awards voucher-based funding for zero-emission mobility programs that provide service in California's historically underserved communities. CMO is funded by California Climate Investments and is administered by a collaboration between CALSTART, the Shared Use Mobility Center, GRID Alternatives, and Local Government Commission. CMO has made a concerted effort to center equity in its awardee process.

Low Carbon Transit Program (LCTOP)

The LCTOP was created to support operating and capital assistance for transit agencies to reduce greenhouse gas emissions and enhance mobility. This program gives priority to serving disadvantaged communities. Eligible projects selected by LCTOP will support new or expanded bus or rail services, expand intermodal transit facilities, and may include equipment acquisition, fueling, maintenance and other costs to operate those services or facilities, with each project reducing greenhouse gas emissions.⁹

Appendix A
Resolution Approving
Zero Emission Bus Rollout Plan

**LAKE TRANSIT AUTHORITY
RESOLUTION #2022-23-12**

**APPROVING THE LAKE TRANSIT AUTHORITY
ZERO-EMISSION BUS ROLLOUT PLAN**

WHEREAS, California Code of Regulations Title 13, Division 3, Chapter 1, Article 4.3, Part 2023.1(d), Zero Emissions Bus Rollout Plan Requirements, requires that a transit agency Zero-Emission Bus Rollout Plan be approved by its governing Board; and

WHEREAS, the Zero-Emission Bus Rollout Plan sets forth Lake Transit Authority's plan which meets the following requirements:

- A goal of full transition to zero-emission buses by 2040 with careful planning that avoids early retirement of conventional internal combustion engine buses;
- Identification of the types of zero-emission bus technologies that Lake Transit Authority is planning to deploy;
- A schedule for zero-emission and conventional internal combustion engine bus purchases;
- A schedule for conversion of conventional internal combustion engine buses to zero-emission technologies;
- A schedule for construction of facilities and infrastructure modifications or upgrades, including charging, fueling, and maintenance facilities, to deploy and maintain zero-emission buses;
- Explanation of how Lake Transit Authority plans to deploy zero-emission buses in Disadvantaged Communities;
- A training plan and schedule for zero-emission bus operators and maintenance and repair staff; and
- Identification of potential funding sources.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Lake Transit Authority approves Lake Transit Authority's Zero-Emission Rollout Plan.


Adoption of this Resolution was moved by Director Perdock, seconded by Director Cremer, and carried on this 10th day of May 2023 by the following roll call vote:

AYES: Simon, Cremer, Mattina, Perdock, Sabatier

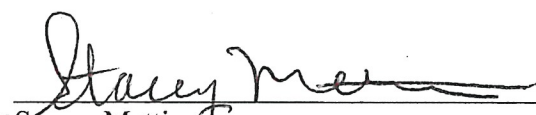
NOES:

ABSENT: Directors Warnement, Leonard, Parlet

**WHEREUPON, THE CHAIRMAN DECLARED THE RESOLUTION ADOPTED,
AND SO ORDERED.**



ATTEST: Jesus Rodriguez
Secretary



Stacey Mattina
Chair