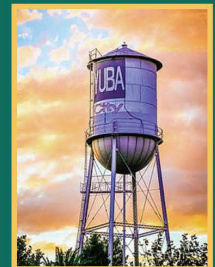
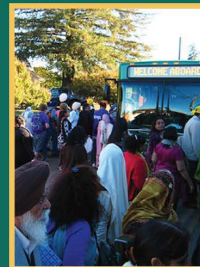
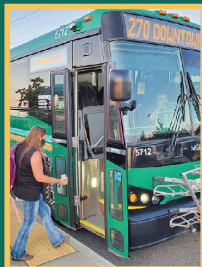


# YUBA-SUTTER TRANSIT AUTHORITY

## ZERO-EMISSION FLEET TRANSITION PLAN



April 2023

Yuba-Sutter Transit





## Table of Contents

1. Agency Overview .....	4
Service Area.....	4
Services Provided .....	4
Fixed Route .....	4
Dial-A-Ride .....	5
Rural Routes.....	5
Commuter Service.....	5
2. Facility Needs .....	6
Next Generation Transit Facility.....	6
Long Term Fleet Management Plan .....	7
3. Policy and Legislation.....	9
California Air Resource Board’s Innovative Clean Transit Regulation.....	9
Zero-Emission Bus Fleet Conversion Policy.....	9
Sustainable Transit for a Healthy Planet Challenge .....	9
4. Local Energy Provider.....	10
Resiliency.....	10
5. Costs and Funding Opportunities .....	12
6. Employee Training .....	14
On and Offsite Training .....	14
Facility Construction.....	16
Facility Operation Training.....	16

## Figures

Figure 1 Rendering of the Next Generation Transit Facility .....	6
Figure 2 Graph showing potential ZEB conversion if sufficient funding can be obtained.....	8
Figure 3: PG&E Graphic of program to help implement heavy duty electric vehicles into fleets. ....	10

## Tables

Table 1: Current information on makeup of bus fleet .....	7
Table 2 Estimated Cost of 100% fleet conversation to ZEB by 2033.....	12
Table 3 Potential Funding Sources for Fleet Conversion to ZEB .....	13

# I. Agency Overview

The Yuba-Sutter Transit Zero-Emission Fleet Transition Plan, which is consistent with the Yuba-Sutter Transit Climate Action Plan, has been prepared for the purpose of compliance with the Federal Transit Administration Dear Colleague Letter dated December 1, 2021, requiring such a plan for continued eligibility under certain federal funding sources. This plan also serves as the foundation of the Yuba-Sutter Transit Zero-Emission Roll-Out Plan that under the California Air Resources Board adopted Innovative Clean Transit Rule is due by July 1, 2023.

This plan formalizes Yuba-Sutter Transit's intentions for the implementation of zero-emission buses (ZEBs) and the ultimate conversion to an all-ZEB fleet. As a result, this plan documents the key long- and short-term capital investments which ultimately include a new maintenance, operations, and administration facility as well as planned ZEB purchases to modernize and improve the safety and efficiency of the fleet. While Yuba-Sutter Transit anticipates challenges with infrastructure development and the implementation of new technologies, it is believed that first constructing the Next Generation Transit Facility before taking delivery of the first ZEBs will help to avoid many of the issues and shortcoming with early ZEB implementation especially for smaller transit systems and ultimately result in a more effective approach to reducing GHG emission in the bi-county region.

## Service Area

The sole provider of public transportation for the Counties of Sutter and Yuba and the Cities of Live Oak, Marysville, Wheatland and Yuba City, Yuba-Sutter Transit operates a network of local fixed route, intercity commuter, demand-response (Dial-A-Ride) and rural route services for the bi-county area. Service is operated Monday through Saturday. No service is provided on Sundays or major holidays. Yuba-Sutter Transit contracts with a private provider for the operation and maintenance of all services.

Yuba-Sutter Transit has a fleet of 51 revenue vehicles (22 fixed route, 16 demand response/rural route and 13 commuter buses) operating six urban fixed routes; three rural routes; an urban Dial-A-Ride service; and an intercity commuter service between Marysville/Yuba City and downtown Sacramento. Yuba-Sutter Transit's six local fixed routes serve the Cities of Yuba City and Marysville and the unincorporated Yuba County communities of Linda and Olivehurst. A total of 931,951 passenger trips were provided by these services in FY 2019.

## Services Provided

The following core services are currently being provided by Yuba-Sutter Transit. It is anticipated that these offerings may expand with the completion of a Comprehensive Operational Analysis in 2023 and the anticipated completion of the Next Generation Transit Facility in 2026.

### Fixed Route

Yuba-Sutter Transit offers six fixed routes that generally operate from 6:30 a.m. to 6:30 p.m. on weekdays and from 8:30 a.m. to 5:30 p.m. on Saturdays. Route 1 is a trunk route offering half-hour

service across the urban area from the Walton Terminal in west Yuba City to Yuba College in east Linda. Route 2 is a loop route of Yuba City that offers half-hour service on weekdays and hourly service on Saturdays. Route 5 is an hourly service that connects south Yuba City with the Walton Terminal for connections to Routes 1 and 2. Route 4 is an hourly loop route of Marysville with service to the North Beale Transit Center in Linda for connections with Routes 1, 3 and 6. Route 3 is a half-hour route serving the Linda/Olivehurst communities from south Olivehurst to Yuba College with connections to other routes at the North Beale Transit Center. Route 6 is an hourly service in Linda that offers connections with other routes at Yuba College and the North Beale Transit Center.

### Dial-A-Ride

The Dial-A-Ride service is available in the urban area from 6:30 a.m. to 9:30 p.m. on weekdays and from 8:30 a.m. to 5:30 p.m. on Saturdays. The service is available only to eligible seniors (65+) and persons with disabilities except after 6:00 p.m. on weekdays when is open to all passengers without restriction.

### Rural Routes

The Foothill Route connects the communities of Brownsville, Oregon House, Willow Glen, and Loma Rica to Marysville offering two roundtrips every Tuesday, Wednesday, and Thursday. Passengers can connect with other Yuba-Sutter Transit services at the Yuba County Government Center in Marysville.

The Live Oak Route offers two roundtrips between the City of Live Oak and Marysville/Yuba City on weekdays. Passengers can connect to other Yuba-Sutter Transit services at the Alturas & Shasta Terminal in Yuba City or at the Yuba County Government Center in Marysville.

The Wheatland Route offers one round trip each weekday between the City of Wheatland and Linda and Marysville. Connections to other Yuba-Sutter Transit services are possible at the North Beale Transit Center in Linda and at the Yuba County Government Center in Marysville.

### Commuter Service

Yuba-Sutter Transit provides both peak hour commuter and midday service each weekday between Marysville/Yuba City and downtown Sacramento via both the State Route (SR) 99 and SR 70 corridors. The commuter service consists of ten morning runs (six via SR 99 and four via SR 70) and ten afternoon runs from Sacramento (six via SR 99 and four via SR 70). Morning downtown arrival times are provided between 6:15 and 7:40 a.m. Afternoon commute trips leave downtown Sacramento between 3:45 p.m. and 5:35 p.m. The Mid-Day Express offers three round trips each weekday that arrive in downtown Sacramento at 9:00 a.m., noon and 2:00 p.m. (one via SR 99 and two via SR 70). Connections to other Yuba-Sutter Transit services are possible at several locations in both counties. Connections to other Sacramento area transit bus and rail operations are possible in downtown Sacramento.

## 2. Facility Needs

Yuba-Sutter Transit's existing operations, maintenance and administration facility is an over 60-year-old former Seven-Up Bottling plant that was purchased and converted for transit use in 1996 and expanded again in 2011 to its current maximum capacity. This undersized (3.2-acre) and technologically obsolete facility lacks sufficient space to accommodate future growth or transition to a zero-emission bus fleet.

### Next Generation Transit Facility

Knowing that the current facility has limited space, a battery electric bus feasibility study was completed in 2018 as part of the Yuba-Sutter Transit Corridor Enhancement Plan. This analysis concluded that space and local utility power limitations would allow for the conversion of only 12 buses to battery electric operation before a significant investment would be required to both the on- and off-site infrastructure and the limited size of the site could not allow even the transition of the existing 51-bus fleet let alone provide any room for future growth thus necessitating an investment in a replacement, long-term facility.

Therefore, the linchpin for Yuba-Sutter Transit to transition to ZEB operation is the construction of a new Next Generation Zero-Emission Transit Maintenance, Operations and Administration Facility with the capacity to maintain and operate enough ZEBs to accommodate system growth well into the future.

Knowing this, Yuba-Sutter Transit completed a facility feasibility and site selection study that resulted in the July 2021 purchase of the preferred 19.2-acre site. Funding is now being sought for the design and construction of this facility using the services of a grant writing consultant to assist in this process. The facility will be designed to house transit operations for the next 30 - 50 years. The new facility will initially be constructed



Figure 1 Rendering of the Next Generation Transit Facility

with the electrical infrastructure to support a fleet of battery-electric buses with a significant amount of solar power generation and on-site energy storage as well as sufficient space for a potential hydrogen fueling station should that option be appropriate in the future. Space will also be available for alternative clean modes of transportation for implementation as they make sense in the region.

The ability of Yuba-Sutter Transit to even start this transition is contingent upon the construction of a new facility as the decision has been made not to expend time, energy, and funding for this purpose on the current site as it will soon be vacated and sold. As a result, local and discretionary funding is being set aside to match state and federal funds to construct a new facility that at completion is currently expected to cost approximately \$47.5 million in 2023 dollars. The facility will initially have the infrastructure in place to allow for the operation of eight ZEBs which will be easily expandable as additional ZEBs are purchased. The facility is currently scheduled for completion by the end of 2026 if the necessary funding is obtained through the various state and federal grants that are now being submitted.

### Long Term Fleet Management Plan

Yuba-Sutter Transit’s goal is to maintain a modern reliable fleet of vehicles appropriately sized for the services provided. For this reason, 28 of the current 51-bus fleet were replaced between 2018-2022.

*Table 4: Current information on makeup of bus fleet*

Number of Buses	In Service Year	Bus Make	Bus Model	Fuel Type	Length	Bus Type	Planned Replacement
3	2010	MCI	D4500	Diesel	45	Over the Road	2026
3	2012	MCI	D4500	Diesel	45	Over the Road	2026
7	2018	MCI	D4500	Diesel	45	Over the Road	2033
6	2013	Gillig	G27B	Diesel	35	Standard	2026
5	2014	Gillig	G27B	Diesel	35	Standard	2026
11	2019	Gillig	35DD	Diesel	35	Standard	2032
6	2014	Chevy	Titan II 4500	Diesel	25	Cutaway	2022 & 2029
10	2019	Ford	Glaval	Gasoline	24	Cutaway	2029

Consequently, there is a window until 2026 when the next new buses are scheduled to arrive for Yuba-Sutter Transit to construct the Next Generation Transit Facility without delaying the transition to an all-ZEB fleet. The new facility will be set up initially for BEBs, but Yuba-Sutter Transit will remain fuel agnostic and consider any zero-emission technology that could be implemented to benefit our patrons. As a result, preliminary layouts of the new facility leave adequate space for a future hydrogen fueling facility should advancements in hydrogen production and storage become cost competitive. In the meantime, a significant amount of solar production capacity with onsite energy storage will be installed to ensure reliance and reduce the cost of fueling ZEBs allowing more capital funds to be available for the purchase of ZEBs.

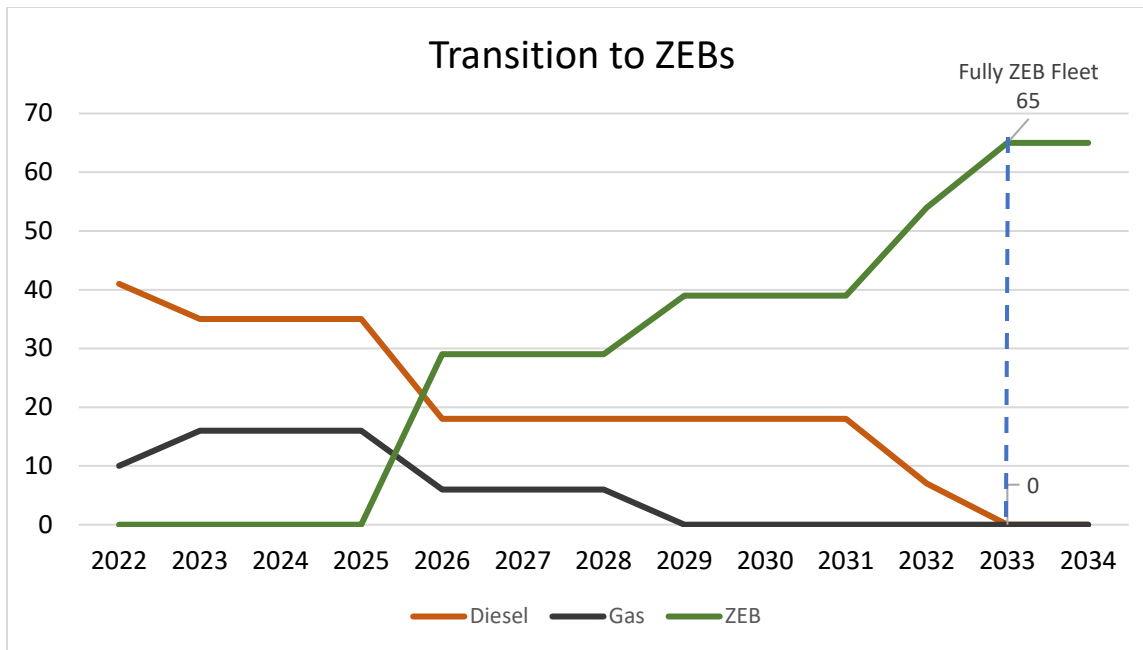


Figure 2 Graph showing potential ZEB conversion if sufficient funding can be obtained.

The new facility will be constructed with ample capacity to charge BEBs. Therefore, as funding allows, Yuba-Sutter Transit will purchase up to 100% BEBs starting in 2026. This is based on the rate of technological advancement, costs, and availability of BEBs of the type and size needed. Preliminary analysis shows that buses currently available can operate our fixed route system based on climate, terrain, daily mileage, and hours of daily operation. Over the road BEBs are just now being produced, but it appears that their range will be sufficient to make the current 90-mile round trip to Downtown Sacramento each morning and afternoon though turn-arounds may be problematic. There still needs to be advancement in range and/or battery capacity of cutaway buses for the Dial-A-Ride service as the current range of 120 miles (80-90 miles real world range) is barely sufficient to meet our operational needs. It is anticipated that by the next delivery date for cutaway buses in 2026, such vehicles will be available.



## 3. Policy and Legislation

The following policies have impacted and will continue to influence decisions over the coming years.

### California Air Resource Board's Innovative Clean Transit Regulation

In December 2018, the California Air Resources Board (CARB) passed the Innovative Clean Transit (ICT) regulation which is designed to transition all public transit agencies in the State of California from conventional internal combustion engine powered buses (compressed natural gas, diesel, etc.) to zero-emission buses (battery-electric or hydrogen fuel cell electric) by 2040. The regulation requires a progressive increase of an agency's new bus purchases to ZEBs based on their fleet size. Under the ICT regulation, each agency's purchase requirements are based on its classification as either a "Large Transit Agency" or a "Small Transit Agency". As a small agency, beginning January 1, 2026, 25% of all Yuba-Sutter Transit bus orders must be ZEBs until January 1, 2029, when 100% of all buses ordered must be ZEBs.

In addition to the ICT regulation, California has also implemented the Low Carbon Fuel Standard to provide credits to those that utilize clean fuels and funding to help support GHG reducing activities. These are just two of the programs that play a part in California's broader climate change strategy that affect Yuba-Sutter Transit. The foundation of these programs is the California Global Warming Solutions Act of 2006 and Senate Bill (SB 32) in 2016 that set the goal of reducing GHG emission to 40% below 1990 levels by 2030.

### Zero-Emission Bus Fleet Conversion Policy

In July 2021, the Yuba-Sutter Transit Authority Board of Directors adopted the Zero-Emission Bus Fleet Conversion Policy. This policy committed the agency to the 100% conversion to zero-emission buses by 2035, well in advance of the statewide goal of 2040. This action was contingent upon receiving adequate funding to construct the Next Generation Zero Emission Transit Maintenance, Operations and Administration Facility by 2026 to maintain and operate ZEBs as well as to cover the incremental cost of the vehicles. With the new facility, the 2035 goal is attainable based on the current fleet replacement plan which assumes the turnover of the entire fleet by that date. This policy was adopted in response to, and in support of, the California Air Resources Board (CARB) passed ICT regulation which requires that all public transit agencies gradually transition to a 100% zero-emission fleet with a statewide goal for full transition of 2040.

### Sustainable Transit for a Healthy Planet Challenge

Yuba-Sutter Transit joined the Federal Transit Administration (FTA) healthy planet challenge in 2021 and consequently developed a Transit Climate Action Plan as required by the challenge. The agency Transit Climate Action Plan contains several goals to minimize the carbon footprint of transit operations such as to install employee and public chargers to encourage ZEV use; minimizing energy use of the facility through efficiency improvements and the installation of solar power generation; and increases to transit ridership. Most importantly it contains intermediate steps that include the purchase of ZEBs even before they are required as part of the ICT to begin the early conversion to a 100% zero emission fleet by 2035. The Yuba-Sutter Transit Climate Action Plan will continue to be implemented and updated as needed.

## 4. Local Energy Provider

The Yuba-Sutter Transit service area is served by the investor-owned public utility company Pacific Gas and Electric (PG&E) for both electric and gas service. The [PG&E EV Fleet Program](#) helps fleets easily and cost-effectively install charging infrastructure to save money, eliminate tailpipe emissions, and power large fleets. This comprehensive program provides incentives and rebates for EV infrastructure (depending on facility location and vehicle types), construction, and mainline power delivery upgrades. Under this program, PG&E covers the cost to bring the anticipated power needed to the site from the nearest substation. The program also can provide substantial construction and logistical support, including site design and permitting assistance. Yuba-Sutter Transit will apply to participate in the program when further along in the new facility design process.

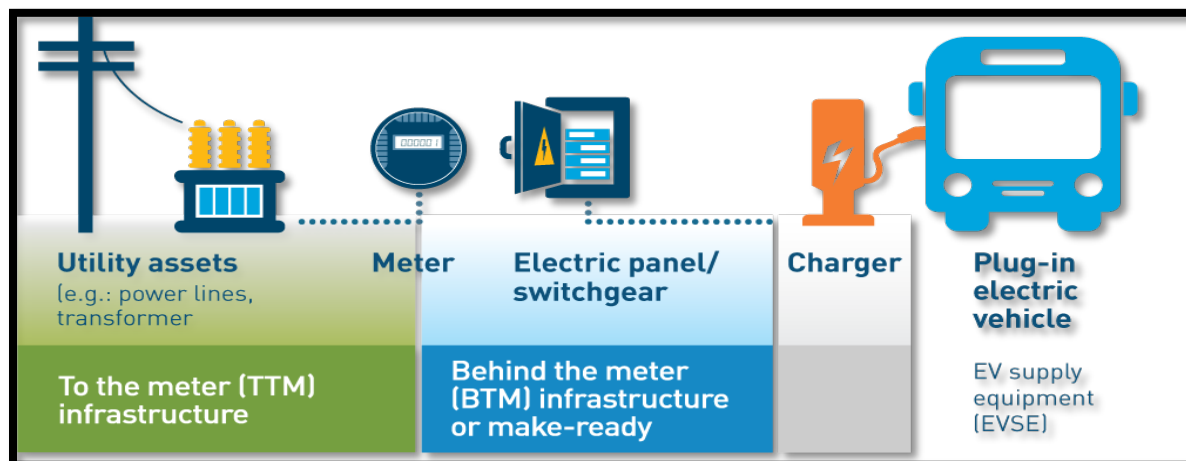


Figure 3: PG&E Graphic of program to help implement heavy duty electric vehicles into fleets.

Yuba-Sutter Transit staff has been in contact with our assigned PG&E Electric Vehicle Onboarding Specialist to express interest in participating in the fleet ready program. The program would cover the cost to bring the necessary power needed over a 10-year planning horizon to the new Next Generation Transit Facility site. This program would potentially remove a major obstacle to fleet transition by providing a substantial financial investment to upgrade the electrical grid to provide sufficient power for future bus fleet charging. Additionally, Yuba-Sutter Transit will be working with PG&E to install solar on the Next Generation Transit Facility during initial construction to offset facility energy costs to provide more energy for BEB charging. As additional BEBs are purchased, a 1.52 MW solar field will be constructed on approximately 3 acres behind the facility to minimize energy charges. Consequently, more funding can be directed to facility construction and the purchase of ZEBs. PG&E has also provided “Take Charge: A Guidebook to Fleet Electrification and Infrastructure” which contains a significant amount of decision-making information to assist in the coordination with PG&E.

### Resiliency

The Next Generation Transit Facility Plan focused on the resiliency of the new facility as it is essential that the facility can continue to operate during natural disasters and extreme weather events. With the transition to ZEBs, this will entail redundant electrical systems and onsite energy generation and storage to guard against grid interruptions due to natural disasters prone to this area such as floods, wildfire, or extreme heat events. The Next Generation Transit Facility will partner with PG&E to create a DC

microgrid to build a stronger, more resilient electric grid. The Community Microgrid Enablement Tariff (CMET) program led by PG&E was launched in April 2021 and allows the development of microgrids and resiliency solutions. This will enable Yuba-Sutter Transit to remain fully operational during grid interruptions and help build overall grid resiliency in the future. With ample space for solar power generation at the new site, funding and ever improving energy storage technology, the Next Generation Transit Facility will be able to achieve the goal of being able to provide reliable transportation services with ZEBs, even during emergencies and extreme weather events. These essential resiliency components will also reduce the overall cost of powering the vehicles through PV power production and by shifting energy use to off-peak hours through on-site energy storage. This will reduce operating costs and enable Yuba-Sutter Transit to provide safe and efficient transit services to the public. These resiliency measures are mutually beneficial to Yuba-Sutter Transit and PG&E and consequently are included in this Fleet Transition Plan.

## 5. Costs and Funding Opportunities

The Yuba-Sutter Transit Board has made a commitment to be 100% zero emission by 2035 if sufficient funding can be obtained to construct a facility with the necessary fueling infrastructure to support a ZEB fleet by 2026 as well as to cover the incremental cost of the vehicles. Following the current Capital Improvement Plan (CIP), this goal would be achieved by as early as 2033. As shown below, this would require \$53.3 million for these purchases based on 2022 prices assuming implementation of BEB technology.

*Table 5 Estimated Cost of 100% fleet conversation to ZEB by 2033*

Year	Number of ZEB Purchased	Percentage ZEB	Facility/ZEB Bus Types	ZEB Bus Fuel Types	Required BEB Range	Estimated Cost Per ZEB	Total Cost
2026			Next Generation Transit Facility				\$47,500,000
2026	6	100%	Over-the-Road Bus	Battery Electric	200	\$1,400,000	\$8,400,000
2026	13	100%	Standard Bus	Battery Electric	200	\$1,000,000	\$13,000,000
2026	10	100%	Cutaway	Battery Electric	125	\$400,000	\$4,000,000
2029	10	100%	Cutaway	Battery Electric	125	\$400,000	\$4,000,000
2032	15	100%	Standard Bus	Battery Electric	200	\$1,000,000	\$15,000,000
2033	11	100%	Over-the-Road Bus	Battery Electric	200	\$1,400,000	\$15,400,000
<b>Total</b>	<b>65</b>						<b>\$107,300,000</b>

To achieve this level of funding, capital from multiple funding sources including federal formula and discretionary funds, state funds, local funds, and special grant funding will be necessary. The table below lists the existing funding sources that can potentially fund this transition, but it is likely that additional funding sources will be needed. Yuba-Sutter Transit has designated a significant amount of discretionary funds for the facility project and for future investments in BEBs. In addition, Yuba-Sutter Transit has already received an \$8.5 million grant from the California Affordable Housing and Sustainable Communities Program to fund a significant portion of electrical infrastructure, solar, and BEB/ZEV chargers in the new facility and a \$15 million Federal RAISE grant to fund construction of the facility. It is through partnership like this that Yuba-Sutter Transit will be able to reach their goal of being all electric by 2035.

In recent years, there has been increased funding at the state and federal level as well as development of new programs specifically to aid agencies in ZEB fleet and facility planning, capital purchases, construction and operations. The increased funding opportunities will need to continue as ZEB prices have increased sharply over the past year due to supply chain issues, cost of bus assembly components and overall economic inflationary pressures. Additionally, the projected fuel and maintenance savings from BEB operation will need to be realized in real world operations to free up funds for the purchase of

ZEBs and the necessary infrastructure that is needed.

Table 6 Potential Funding Sources for Fleet Conversion to ZEB

Type	Agency	Program
Federal	United States Department of Transportation (USDOT)	Rebuilding America Infrastructure with Sustainability and Equity (RAISE) Discretionary Grant Program
		Capital Investment Grants – New Starts
		Capital Investment Grants – Small Starts
		Transit Infrastructure Project Appropriation
		Transportation Infrastructure Finance and Innovation Act (TIFIA) loan
	Federal Transportation Administration (FTA)	Bus and Bus Facilities Discretionary Grant
		Low- or No-Emission Vehicle Grant
		Metropolitan & Statewide Planning and Non Metropolitan Transportation Planning
		Urbanized Area & Rural Area Formula Grants
		State of Good Repair Grants (SGR)
		Flexible Funding Program – Surface Transportation Block Grant Program
US Department of the Treasury	New Market Tax Credits	
	Opportunity Zones	
State	California Air Resources Board (CARB)	Low Carbon Fuel Standard Credits
		Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP)
		Cap-and-Trade Funding
		State Volkswagen Settlement Mitigation
		Clean Mobility Options
	California Energy Commission	California Lending for Energy and Environmental Needs (CLEEN)
		Clean Transportation Program
	California Transportation Commission (CTC)	Solution for Congested Corridor Programs (SCCP)
	California State Transportation Agency	Transit and Intercity Rail Capital Program (TIRCP)
	California Department of Transportation (Caltrans)	Low Carbon Transit Operations Program (LCTOP)
State Transit Assistance (STA) funds		
State of Good Repair (SGR)		
Local	SACOG Grant Programs	SACOG Regional Program: Transformative
		SACOG Regional Program: Maintenance & Modernization
	Yuba-Sutter Transit	Joint Development
		Sale of excess facility
		Advertising revenues
		Farebox
		Local Transportation Funds (LTF)
Public-Private Partnership		

## 6. Employee Training

Yuba-Sutter Transit understands that all operating and maintenance personnel will need some level of training to seamlessly transition to a ZEB fleet. Staff must develop new routines and procedures to handle all aspects of owning, fueling, maintaining, and operating ZEBs. At a minimum, the following positions with the current number of personnel will need sufficient training to safely and efficiently achieve this.

- Drivers (48)
- Dispatchers (6)
- Maintenance (7)
- Utility (6)

### On and Offsite Training

Yuba-Sutter Transit will work with the incumbent private transit service contractor to ensure the necessary training is received. There are a few ways in which this will be achieved. First, Yuba-Sutter Transit is fortunate that several bus manufacturers are accessible within a few hours of our Northern California facility. This will enable staff to attend manufacturer-offered training at their facilities as well as specialized training at Yuba-Sutter Transit's facility. Secondly, when ZEBs are procured, the contract will contain required on-site training for employees that will take place before delivery and at least one year after delivery. This approach will also be taken with chargers, repair equipment and the operation of ZEBs. It is also essential that bus operators receive the requisite training to safely and efficiently operate ZEBs. With new technology, it is anticipated that virtual reality training as well as live virtual reality sessions can be used by OEM instructors to teach or even instruct mechanics in actual repairs remotely.

Yuba-Sutter Transit is working with the local Community College to implement more specialized classes and a ZEB certification in an effort to increase the skill of the local workforce and to provide the opportunity for Yuba-Sutter Transit contract mechanics to receive the necessary specialized training. Through working with Yuba College Automotive Technology staff, Yuba Sutter Transit was put in contact with Valley Clean Air Now (Valley CAN) which is a 501(c)(3) public charity committed to quantifiably reducing air emissions in California's San Joaquin Valley. Valley CAN has worked with a number of high schools and community colleges throughout the San Joaquin Valley to implement curriculum for training technicians to diagnose and repair ZEVs (<https://valleycan.org/workforce-training/>). Yuba Community College located in Linda near the Next Generation Transit Facility site, has been coordinating with Valley CAN on curriculum, certifications, classroom lab equipment, and the supplies needed to offer the additional classes to provide a ZEV certificate. Yuba-Sutter Transit will continue to coordinate and partner with Yuba College to get the additional classes up and running as well as explore opportunities to partner through an internship program for students working on their ZEB certification. The local specialized training will be a great asset to those operating and maintaining the Yuba-Sutter Transit ZEV fleet and play a key role in the overall training for maintenance staff.

There are also opportunities through the Federal Technical Assistance and Workforce Development program that will provide technical assistance for training staff. Additionally, Sunline Transit Agency located in Thousand Palms, California operates the West Coast Center of Excellence in Zero Emission Technology. Below is the list of classes that the Center currently offers to provide essential training to guide and assist the ZEB implementation process. Yuba-Sutter Transit has been in contact with Sunline staff on the availability and schedule of these essential training courses.

- Overview
  - New leadership role with ZEB adoption
  - Establishing agency mission and policies to support ZEB fleet and expansion
  - Encouraging organizational cultural shift
  - Developing staff ownership of ZEBs
- Zero-Emission Bus Overview
  - Introduction to ZEB technology
  - Differences between ZEBs and incumbent technologies
  - ZEB demonstrations globally
  - Introduction to ZEB fueling
  - ZEB and fueling vendors
  - Industry standards developed and in development
- Zero-Emission Bus Operations
  - Introduction to zero-emission bus technology
  - Differences between ZEBs and incumbent technologies
  - Dashboard familiarization
  - ZEB fueling training
  - Preventing road calls
- Zero-Emission Bus Maintenance
  - Introduction to ZEB technology
  - Differences between ZEBs and incumbent technologies
  - Preventative maintenance practices for ZEBs
  - Unscheduled maintenance practices for ZEBs
  - General and high-voltage safety training
  - Basic diagnostics and troubleshooting
- Fiscal Management
  - ZEB grant management
  - ZEB total cost of ownership
  - Funding opportunities
  - ZEB budget development
- Zero-Emission Bus Procurement
  - Federal Transit Administration guidelines for ZEBs
  - American Public Transportation Association White Book: Zero-Emission Technical Standards
  - Contract Options for ZEBs
- Zero-Emission Bus Policies and Regulations
  - Federal Transit Administration guidelines for ZEBs
  - American Public Transportation Association White Book: Zero-Emission Technical Standards

- Contract Options for ZEBs
- Planning for ZEB Operation
  - Federal Transit Administration guidelines for ZEBs
  - American Public Transportation Association White Book: Zero-Emission Technical Standards
  - Contract Options for ZEBs

As more BEV are put into commercial and public service, additional training programs and opportunities will arrive such as online classes. Yuba-Sutter Transit's contract maintenance staff will complete the Inspecting Electric Drive Commercial Vehicles sponsored by the Federal Motor Carrier Safety Administration in partnership with the Commercial Vehicle Safety Alliance to introduce them to BEV. This online training is free and will be completed by maintenance staff in 2023. This training as well as other options and opportunities already discussed will prepare staff for the arrival of BEBs in 2026 upon the completion of the Next Generation Transit Facility.

### Facility Construction

Yuba-Sutter Transit is coordinating with training programs such as North State Builds and America's Job Center of California to determine the type of training and the number of potential workers locally that are completing the training. These organizations are currently offering a 140-hour pre-apprenticeship training course to open the door for careers in the construction industry. These training programs work in cooperation with local State Building Trades Union Apprenticeship Programs to provide the necessary training so that participants can move onto apprenticeships and careers in construction. Projections show that construction of the Next Generation Transit Facility and the transition to a BEB fleet will support over 400 jobs. Ideally, many local qualified firms will be able to participate in some phase of the construction of the facility. It is hoped that the Next Generation Transit Facility will be a local source of pride and elevate investment in vacant parcels in the surrounding area to maintain local construction jobs.

### Facility Operation Training

With ZEB implementation still being a few years away due to the need to construct the Next Generation Transit Facility, Yuba-Sutter Transit will be proactive in preparing employees for the change in vehicle and facility operations due to the new fuel source and charge management software. Centralized energy management software systems use artificial intelligence and automation to reduce human error, increase operational efficiency, reduce costs by charging off peak times, lengthen battery life, and increase safety. Proper training to utilize all of the high-tech aspects of the Next Generation Transit Facility will benefit daily operations as well as the availability of transportation during emergency situations.

Yuba-Sutter Transit is aware that these increasingly sophisticated systems will add work and responsibilities which may require additional staff, especially those with the specific knowledge and abilities to complete these tasks. However, existing staff will be given training and opportunities to acquire the necessary knowledge and skills to operate the ZEB equipment and software to qualify for transfer or promotion to new positions as job opportunities become available within the agency. In addition, training for the use and operation of new systems and software will be written into the



contract specifications when the equipment or software is purchased from vendors. Secondly, Yuba-Sutter transit will work with local officials, especially first responders, to ensure that they have received the necessary training to respond to emergencies specific to BEBs such as fires. This will benefit first responders as the number of ZEV and zero-emission heavy duty vehicles continues to grow.