



# San Luis Obispo Regional Transit Authority

## Short Range Transit Plans

### *Working Paper 7: Capital Improvement Plans*

*Prepared for the*  
**Regional Transit Authority**

November 15, 2024

Prepared by LSC Transportation Consultants





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### *Working Paper 7: Capital Improvement Plans*

#### *Prepared for*

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## **INTRODUCTION**

This is the seventh in a series of working papers being prepared as part of the Joint Short Range Transit Plan study for the San Luis Obispo Regional Transit Authority (RTA) and the City of San Luis Obispo's transit program (SLO Transit). This working paper focuses on the recommended capital items needed to operate transit services, specifically the transit fleet, the passenger stops, and the maintenance/operations facility.

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**FLEET REPLACEMENT PLAN**

Transit vehicles must be regularly replaced to maintain a safe and reliable fleet. RTA’s Strategic Business Plan states that “We will operate and maintain a modern and clean fleet and facilities that will be pleasing to our customers and a source of pride for our employees and our communities”. The standard set by the business plan is to match the SLO Transit standard of replacing revenue vehicles when they reach their useful life. However, if funding is constrained, the minimum allowable standard is to not exceed 40% of revenue vehicle fleet beyond the FTA defined useful life. RTA’s 2024 Transit Asset Management Plan sets a target to allow no more than 18.18% of heavy-duty buses, 25% of cutaway buses, and 20% of ADA Minivans to exceed the FTA defined useful life standard in terms of years or miles. RTA exceeded those targets for heavy duty buses and cutaway buses. The target was not met for minivans; however, replacement of the ADA minivans is currently in progress and is addressed in this working paper.

As the vehicle procurement process can take multiple years, transit agencies must identify their vehicle needs well in advance. Additionally, the State of California’s (CA) Innovative Clean Transit (ICT) regulation will begin impacting transit vehicle procurement in 2026, at which point 25 percent of small transit agency fleet bus purchases will be required to be Zero Emission Buses (ZEBs). By 2029, this purchasing requirement will increase to 100 percent. By 2040, all vehicles in the fleet will need to be ZEBs. To meet these standards, transit agencies can purchase either battery-electric buses (BEBs) or fuel-cell electric buses (FCEBs) or seek waivers from the California Air Resources Board if current ZEB technologies cannot meet the transit agency’s needs.

Currently, ZEBs are considerably more expensive than gasoline or diesel vehicles, meaning RTA will need to secure additional funding to meet local match requirements for capital grants. While ZEBs are more expensive at this point, the market is constantly changing as new models are released and older models are improved, making it hard to predict future pricing. The seven-year RTA vehicle replacement schedule presented in this report is subject to change as new ZEB technologies become available and costs stabilize.

RTA has 69 vehicles that are 2 to 16 years old. RTA has 40 fixed route buses, 27 demand response buses, and two replica trolleys that are used seasonally. Table 1 presents RTA’s anticipated vehicle needs and purchasing schedule based on the agency’s current fleet, RTA Zero Emission Bus Rollout Plan (2023), and the Useful Life Benchmark (ULB) of the different vehicle models, as identified by the Federal Transit Administration (FTA). Table 1 does not include any expansion vehicle purchases required to support the recommended service plan presented in this SRTP. RTA has chosen BEB as their zero-emission bus technology.

RTA took delivery of three Gillig buses in May of 2024 –Two BEB and one Diesel. In addition, RTA took delivery of one cutaway and three ADA minivans in Fall of 2024.

Based on the schedule shown in Table 1, RTA will need to procure 34 fixed-route buses and 40 demand response vehicles during the next seven years through Fiscal Year 2031/32. It should be noted that the capital projects shown in the Plan tables depict the year that the purchase order should be placed after

securing the various funding sources necessary to implement the projects. This is important, since a heavy-duty fixed-route bus takes 18-24 months from the time the purchase order is issued until the bus is delivered and capital infrastructure projects can take up to three years once funding is secured. This replacement of 74 vehicles includes 15 cutaways and vans purchased in the last two years of the plan to replace 15 vehicles purchased in the first three years of the plan. The replacement plan requires that 12 minivans in the existing fleet be replaced. These vans are under 14,000 GVWR and are therefore not subject to the current CARB ICT regulations. Within the first two years of the replacement plan, nine of the minivans need to be replaced. It is recommended The RTA could consider replacing some of the minivans with Ford Transit vans rather than the Chrysler Minivans that are currently in the fleet. The two models of Ford Transit Class V 350 vans in the CalACT in the purchasing cooperative contract have a wheelbase of 148 inches with an overall length of 235.5 to 263.9 inches. The interior height is 68 to 77 inches. The Chrysler Minivan has a wheelbase of 121.6 inches, overall length of 204 inches and interior height of 60 inches. Based on September 2024 pricing provided to the CalACT bus purchasing cooperative, the Chrysler minivan has increased in cost by 14% in two years making it comparable to the larger and higher gross vehicle weight rated (GVWR) Ford Class V 350 vans. The base price of the Ford Class V 350 vans range from roughly 74,000 to 82,000 depending on model. The base price of the Chrysler minivan is \$75,000.

Given current market costs and anticipated inflation, it is expected that vehicle replacement needs will cost RTA a total of \$37.7 million over seven years. The schedule shown in Table 1 reflects RTA's intention to phase BEBs into the fleet. Of the 34 fixed route buses, 14 will be BEB by the end of the Plan period. As shown, 24 of the 40 demand response buses will be BEB. This will allow RTA to operate a mixed fleet as long as possible while battery charging infrastructure develops and the battery technology improves.

## **CAPITAL IMPROVEMENT PROGRAM**

Table 2 presents a seven-year capital improvement plan for all items outside of revenue fleet replacement. This includes the replacement of support vehicles, maintenance equipment, technology, bus stop improvements, and BEB charging infrastructure.

This seven-year capital improvement program totals nearly \$17 million and will be funded primarily through the California Senate Bill 125 (SB 125) program and Federal Transit Administration grants. The major components are discussed below.

### **Transit Facilities**

The new RTA Bus Maintenance Facility (BMF) is located at 253 Elks Lane in San Luis Obispo, and is the central location for RTA's administrative, operations, dispatch, and maintenance functions. The facility's on-site parking accommodates approximately seventy public transit vehicles and eighty employee and visitor vehicles. No liquid or gaseous fuel is delivered by pipe to the facility; diesel fuel is "wet hosed" delivered by a fuel truck each night to each bus, while gasoline-powered vans are fueled at card lock facilities by the Bus Operator each day. The Bus Maintenance Facility has four fast-charge direct-current (DC) bus charging stations. As noted above, the RTA intends to install additional bus charging stations as the agency procures more BEBs. Another significant improvement to the BMF is the addition of photovoltaic solar panels and energy storage to help power the facility. This addition is planned for funding in fiscal year 2024-25 and completion in fiscal year 2026/27

The RTA leases two park-out facilities, one located at 1734 Paso Robles Street in Paso Robles and the other located at 800 Rodeo Drive in Arroyo Grande. These two facilities support the north county and south county transit services, respectively. Both facilities have bus parking areas and facilities for bus operator breaks. The RTA is actively developing proposals for assistance with preparing designs for fast-charge DC charging stations at the Paso Robles and Arroyo Grande facilities. The RTA has secured TIRCP funding through the SB 125 funding process to develop BEB charging at these locations.

### **Charging Infrastructure**

The RTA Bus Maintenance Facility has four fast-charge direct-current (DC) charging dispensers. RTA received its first two BEBs in May of 2024—two fixed-route GILLIG buses with 686 kWh battery packs—and has five more due for delivery in October 2025. The RTA BEB fleet will expand significantly with seven 40' BEBs scheduled to be ordered in FY 25/26. With an 18-to-24-month lead time for delivery, these buses will begin operating in daily service in 2027.

RTA has several bus charging projects that will move forward, primarily with discretionary funding from the Transit and Intercity Rail Capital Program (TIRCIP) and the Zero Emission Transit Capital Program (ZETCP) program funded through SB 125 and FTA funds. These projects include two additional phases of charging station improvements at the Bus Maintenance Facility along with the bus yards in Paso Robles and Arroyo Grande. Opportunity charging facilities for on-route charging are also being considered in San Luis Obispo, Paso Robles, Morro Bay and Santa Maria, since currently available ZEBs do not have the range necessary for the RTA's intercity fixed-routes.

Table 1: RTA Vehicle Replacement Schedule - By Year of Purchase Order								7-Year Plan Total		
Plan Period (by Fiscal Year) <sup>2</sup>										
25/2626/2727/2828/2929/3030/3131/32										
Estimated Current Cost of Vehicles		Fixed Route Buses								
Low-Floor Cutaways	\$258,800	Number of Buses (Low-Floor Cutaway)							5	
Diesel - 40' Buses	\$670,400	Number of Buses (40' Diesel)							11	
Gasoline Trolleys	\$266,500	Number of Buses (Trolley Replica)							1	
Gasoline Cutaways	\$161,300	Number of Buses (20-px Cutaway)							3	
Battery Electric - Cutaways	\$345,000	Number of Vans (BEB Cutaways)							2	
Battery Electric - 40' Buses	\$1,371,000	Number of Buses (40' BEB)							12	
		Total Number of Vehicles							34	
		Total Cost <sup>1</sup>							\$29,197,100	
Estimated Current Cost of Vehicles		Demand Response/Cutaway Vehicles								
Gasoline - Cutaways	\$150,000	Number of Vans (Gas Cutaways)								4
Gasoline Small Vans	\$87,500	Number of Vans (Gas Small)								12
Battery Electric - Cutaways	\$345,000	Number of Vans (EV Cutaways)								12
Battery Electric - Small Vans	\$125,000	Number of Vans (EV Small)								12
		Total Number of Vehicles								40
		Total Cost <sup>1</sup>								\$8,453,300
		Total Vehicle Needs								\$37,650,400
<p><b>Note 1:</b> All costs assume 3.0 percent annual inflation.</p> <p><b>Note 2:</b> Starting in 2026, 25% of new vehicle purchases must be ZEBs.</p> <p><b>Note 3:</b> No Altoona tested electric cutaways are available as of the time of writing (October 2024).</p> <p><b>Note 4:</b> Presented schedule is based on the RTA Zero Emission Bus Rollout Plan (2023) and the Federal Transit Administration's Useful Life Benchmark. Future vehicle purchases are subject to change. Additional vehicle purchases necessary to implement service elements included in this S RTP are not included in this table. Does not include existing bus orders.</p>										
Source: LSC Transportation Consultants, Inc.										

**Table 2: RTA Transit Capital Projects -By Year of Contract Award or Purchase Order**

Category	Project	Plan Period (by Fiscal Year)							7-Year Plan Total
		25/26	26/27	27/28	28/29	29/30	30/31	31/32	
Non-Revenue Vehicles	Support Vehicles	\$46,600	\$76,900	\$37,800	\$80,750	\$58,390	\$59,270	\$60,160	\$419,870
Technology	Computer System Maintenance/Upgrades	\$111,570	\$117,150	\$123,010	\$129,160	\$131,100	\$133,070	\$135,070	\$880,130
Capital Maintenance	Maintenance Equipment	\$49,600	\$50,400	\$51,200	\$51,970	\$52,750	\$53,540	\$54,340	\$363,800
Technology	Vehicle ITS/Camera System		\$430,000				\$150,890		\$580,890
Passenger Amenities	Bus Stop Improvements	\$108,000	\$109,700	\$111,400	\$113,070	\$114,800	\$116,500	\$118,200	\$791,670
Capital Maintenance	Engine Replacements on Gillig Fixed Route Buses	\$375,000							\$375,000
Technology	BMF TIFIA Loan Repayment	\$458,060	\$458,060	\$458,060	\$458,060	\$458,060	\$458,060	\$458,060	\$3,206,420
Facility Improvement	Photovoltaic Solar Panels & Energy Storage System at BMF		\$1,359,700						\$1,359,700
ZEB Charging	BEB Charging Phase I at BMF	\$500,000							\$500,000
ZEB Charging	BEB Charging at Paso and Arroyo Grande Yards	\$2,000,000							\$2,000,000
ZEB Charging	Final Engineering/Design for Phase 2 for off-site charging	\$200,000							\$200,000
ZEB Charging	Opportunity Charging - Santa Maria	\$550,000							\$550,000
ZEB Charging	Opportunity Charging - San Luis Obispo	\$566,000							\$566,000
ZEB Charging	Opportunity Charging - Paso Robles	\$600,000							\$600,000
ZEB Charging	BEB Charging Phase 2 at BMF	\$4,000,000							\$4,000,000
ZEB Charging	Opportunity Charging - Morro Bay	\$550,000							\$550,000
TOTAL		\$ 10,114,830	\$ 2,601,910	\$ 781,470	\$ 833,010	\$ 815,100	\$ 971,330	\$ 825,830	\$16,943,480
Source: SLOCOG 2025 FTIP; RTA FY 24 25 Capital Budget; TIRCP Project List, 2023									

## ***Park-and-Ride Lots***

While the RTA serves multiple park-and-rides throughout San Luis Obispo County, the RTA does not directly own any park-and-ride facilities nor are any planned for the seven-year planning period.

## **Passenger Amenities**

Passenger amenities refer to infrastructure that improves the passenger experience while waiting for or getting to and from bus services. RTA's passenger amenities are briefly summarized below.

### ***Bus Stops***

The RTA Capital Improvement Program includes an annual budget for bus stop improvements. In Table 2, bus stop improvements total \$791,000 over the seven-year planning period. Bus stop improvements are made with the goal of improving the overall transit experience for passengers by increasing the comfort, safety and accessibility of the system.

The RTA serves 325 bus stops throughout the county, 87 of which have shelters and 190 of which have benches. Approximately 25 percent of RTA bus stops need ADA access improvements that are under the control of the city or county (i.e., extended sidewalk or larger ADA landing pad), or would benefit from other passenger amenity upgrades. Some RTA stops are shared with SLO Transit, Morro Bay Transit, Santa Maria Area Transit and Monterey-Salinas Transit.

During the On-Board Survey effort which took place October 23<sup>rd</sup> through October 27<sup>th</sup>, 2023, surveyors riding buses recorded boarding and alighting activity on RTA fixed routes. Despite this survey taking place over multiple days its goal was to capture service equivalent to a full weekday service across all routes in service at the time surveying took place. This data provides a useful approximation of daily boarding activity at individual stops, which can be used to plan for bus stop amenities improvements.

Boardings at individual stops that were shared between multiple routes were added together to estimate daily boardings across routes for individual stops. Stops with over 10 estimated daily boardings were then cross-referenced with the RTA bus stop master list finalized in April of 2023 to identify stops with 10 or more boardings and no bench, or 25 or more boardings and no shelter. Identified stops were then explored in Google Maps Street View to verify the lack of those amenities. In some instances, stops were removed from the list of identified stops due to the addition of since the completion of the bus stop master list. The RTA has developed a new Bus Stop Improvement Plan which is currently in draft form and is expected for consideration of approval at the November 2024 RTA Board meeting.

There were 5 stops served by RTA routes that had 10 or more combined boardings and no bench. There were 3 stops served by RTA routes that had 25 or more combined boardings and no shelter. Space for improved bus stop amenities is lacking at some of these stops. A full listing of stops that meet the recommended threshold for benches and shelters is provided in Table 3 below.

The current bus shelter pricing in the CalACT pricing cooperative (RFP #20-01) ranges from \$8,286 for a 9-foot shelter to \$12,356 for a 21-foot shelter. This is base pricing and does not include options such as trash receptacles and map cases. Installation costs will vary depending on site characteristics. The shelter contract also includes solar-powered real-time information displays for \$8,183 which includes a 5-year data plan.

**Table 3: RTA Transit Stop Amenity Concerns**

Route and Stop	Stop ID	Routes Served	Shelter	Bench	Combined Boardings Across Routes	Space for Improved amenities
<b><u>Stops With 25 or More Daily Boardings and No Shelter</u></b>						
Santa Rosa and Foothill (NB)	3542	9N, 12N, 14N	No	No	29	No
Nipomo High School	3705	10N	No	Yes	29	Yes
Fair Oaks @ Traffic Way	3816	27	No	No	29	No
<b><u>Stops with 10-24 Daily Boardings and No Bench</u></b>						
Wilmar @ 19th	3824	28	No	No	20	Yes
Airport at Parkview	3662	B	No	No	14	Yes
Elm @ Fair Oaks	3827	28	No	No	14	No
Cienega/Hwy1 @ 21st	3887	28	No	No	13	Yes
Dolliver @ Hinds	3875	24	No	No	10	Yes
<i>Source: LSC Boarding and Alighting Counts, RTA Transit Stop Amenities Database, Google Maps</i>						

### ***Deterring Loitering at Bus Stops***

Passenger amenities at bus stops are important to enhance a person’s experience while waiting for the bus. In addition to being safe, convenient, comfortable, and accessible for pedestrians waiting for the bus, bus stop amenities need to be designed with features to discourage long-term occupancy and sleeping. Features meant to deter this activity include vertical bars to segment benches into smaller seating areas, sloped benches, partial enclosure of the shelter, and perforated panels rather than solid panels. Passenger shelter lighting that is illuminated during all hours of darkness can also act as a deterrent and security measure. These types of preventive measures have been incorporated by the RTA at recent passenger facility improvement projects, most notably at the Government Center (2020) and Ramona Garden (2024) passenger facilities, as well as the installation of 42 push on-demand solar lights at locations deemed high priority in the last Bus Stop Improvement Plan.

### ***Bicycle Amenities***

The RTA serves 21 stops with bike racks and two stops with bicycle lockers (the Templeton and Halcyon Park-and-Rides).

### **Government Center Passenger Facility**

The 2016 SRTP noted that a significant constraint to the regional San Luis Obispo public transit network is the existing transit hub in downtown San Luis Obispo. The primary passenger transfer hub in San Luis Obispo is centered on the intersection of Osos Street and Palm Street. RTA buses stop on the east side of Osos Street south of Palm Street on approximately 200 feet of straight curb. This is identified as the Government Center by RTA. Up to three RTA buses board and alight passengers there. There is room for a fourth RTA bus around the corner on the south side of Palm Street. In 2020 RTA completed significant improvements to their portion of the Government Center facility adding passenger waiting area, two additional shelters, lighting, a ticket vending machine, display boards, real-time bus arrival digital displays and a bicycle repair station.

The SLO Transit buses stop in five sawtooth bays on the west side of Osos Street north of Palm Street. Each bay is assigned to a specific route. There are four shelter structures with built-in benches and additional bench seating alongside the shelters. Two digital display signs are installed in the passenger waiting area along with signage and route and schedule information. This is identified as the Transit Center by SLO Transit.

The following deficiencies remain:

- There is inadequate space for all RTA buses to independently ingress and egress, which results in non-assigned bus bays and requires passengers to search out their bus along the steep incline of Osos Street.
- The five bays available for SLO Transit limit the ability to schedule a true pulse schedule to maximize direct bus-to-bus transfers.
- While there are public restrooms available at nearby buildings (City Hall, Library, and County Public Works), these are only available during operating hours.
- Transferring between the SLO Transit and RTA systems requires walking across two streets of the same intersection.

### ***Long Term Plan for Relocated Transit Center***

The SLO Transit Innovation Study includes the concept of Mobility Hubs, which brings together public transit, bikeshare, carshare, scooter share, and other first-last mile solutions without the use of a private vehicle. The study notes that a location of interest for a future Mobility Hub is the Downtown Transit Center.

The 2016 SRTP noted that SLOCOG was leading an effort to construct a new enhanced transit center on Higuera Street between Santa Rosa Street and Toro Street. In 2012 the Coordinated Downtown San Luis Obispo Transit Center Study recommended a facility consisting of up to 16 bus bays, indoor/outdoor passenger waiting areas, driver break areas, restrooms and a transit information counter. The larger transit center would allow for more buses to be able to pulse in and out of the transit center which would enable enhanced route timing coordination. In 2017 the SLO City Council adopted the Downtown Concept Plan which also envisions a relocated transit center on Higuera Street between Santa Rosa Street and Toro Street. In November of 2023 the SLO City Council approved the purchase of a property in this block on the northwest corner of Higuera Street and Toro Street (1166 Higuera Street). This is the same property identified in the 2012 Coordinated Downtown San Luis Obispo Transit Center Study as the preferred alternative to advance into environmental review (Alternative 6). Initially this site is envisioned for parking. A transit center would require using the northern part of Higuera Street which is currently striped for parking and a bike lane and was previously one of three one-way travel lanes and parking.

Project development for a relocated transit center would need to involve close coordination between the City of SLO and RTA along with SLOCOG. This would include the development of joint funding applications, environmental clearance, design, project phasing and construction. A key feature not fully envisioned in the 2012 study is the addition of bus charging at bus bays. This will be important to support the transition to a BEB fleet by both SLO Transit and RTA.

## OTHER PLANNED CAPITAL IMPROVEMENTS

### Technology

RTA contracts with the transit technology firm Connexionz to supply Computer Aided Dispatch/Automatic Vehicle Location (CAD/AVL) which integrates real-time bus arrival information, stop annunciation, Automatic Passenger Counting data, destination sign route assignment, Wi-Fi, and vehicle diagnostics on every RTA fixed-route bus. This system connects through the Genfare operator control unit on the bus.

The contract with Connexionz expires in May 2026. RTA will need to either extend the current contract or enter into a new contract with the current provider or a new one through a procurement process. In addition, the demand response CAD/AVL, which is separate from the system used for fixed-routes, is provided through a contract with RouteMatch that expires in 2025. RTA intends to conduct a procurement for demand response CAD/AVL services in early 2025.

As part of the technology updates for RTA, real-time arrival digital display signs should be considered for high boarding locations. Signs can be solar-powered or hardwired. Data is transmitted and displayed via a cellular connection.

### Non-Revenue Vehicles

RTA owns 20 non-revenue vehicles used to support bus operations, administration and maintenance. While the replacement of revenue vehicles is a priority for RTA, an annual budget for non-revenue vehicle replacement is in place and included in Table 2. RTA replaced seven support vehicles with fully electric Chevrolet Bolt EUV sedans in 2024 and is on target to replace two maintenance trucks and one support vehicle in 2025. The support vehicle and one maintenance pick-up truck will be replaced with an electric vehicle.