City of Lompoc
Innovative Clean Transit (ICT) Rollout Plan

A. Transit Agency Information

The City of Lompoc Transit Agency serves Lompoc and surrounding communities in Santa Barbara County. City of Lompoc Transit operates four fixed-route services – Routes 1-3 serve central Lompoc while Route 4 serves the northern communities of Mission Hills and Vandenburg Village. Routes 1-3 operate on hourly headways, each departing the Lompoc Transit Center at Cypress Avenue and I Street at the same time. Route 4 also operates approximately hourly from Mission Plaza. The City also operates the Wine Country Express, a route serving Lompoc, Buellton, and Solvang with three round trips per day Monday through Saturday, and a single round trip service to Santa Barbara on Tuesdays and Thursdays.

Lompoc Transit currently has fourteen buses in its fleet, representing a mix of gasoline and diesel vehicles that seat between 5 and 30 passengers. Lompoc's fleet consists entirely of cutaways; the City does not currently operate any full-sized buses. Lompoc uses their vehicles interchangeably for fixed-route and ADA paratransit service, and two vehicles are typically used for paratransit service on any given day.

1. **Agency contact information**

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2. **Is the agency is part of a joint group - NO**

B. Rollout Plan General Information

The California Air Resources Board (CARB) is charged with protecting the public from harmful effects of air pollution and developing programs and actions to fight climate change. In December 2018, CARB adopted the ICT Regulation that requires all public transit agencies in the state to gradually transition to 100 percent zero-emission bus fleets by 2040.

Through the deployment of zero-emission technologies, the ICT regulation will provide significant benefits across the state, including:

- Reduce NOx and GHG emissions for all Californians, especially in transit-dependent and disadvantaged communities.
- The majority of these benefits will be in the state's most populated and impacted areas where transit buses are most prevalent.

- Increase penetration of the first wave of zero-emission heavy-duty technologies into applications that are well-suited to achieving emission-reduction benefits.
- Save energy and reduce dependency on petroleum and other non-renewable fossil fuels.
- Expand the zero-emission vehicle industry to bring high-quality green jobs to local communities and a trained workforce to California.
- Provide other societal benefits by encouraging improved mobility and connectivity with zero-emission transportation modes and reduced growth in light-duty vehicle miles traveled.

Lompoc Transit's ICT Rollout

This document outlines a plan to guide Lompoc Transit's ICT transition from its current mixture of gasoline and diesel-powered vehicles to a fully electric fleet by 2031. The transition would begin in 2025 with the purchase of the first two BEVs, and all future vehicle replacements will be electric. Lompoc Transit agency anticipates replacing the oldest two vehicles in its fleet each year. The fleet will be fully electrified by 2031.

The ICT Rollout Plan is a coordinating document to assist the planning, design, construction, acquisition, and implementation of zero-emission technology. Lompoc Transit's adoption program will ultimately meet ICT regulation requirements. The ICT plan was approved by City of Lompoc's City Council on July 18, 2023.

The Rollout Plan is divided into the following sections per ICT requirements:

A. Transit Agency Information

B. Rollout Plan General Information

C. Technology Portfolio

D. Current Bus Fleet and Future Purchases

E. Facilities and Infrastructure Modifications

F. Providing Service in Disadvantaged Communities

G. Workforce Training

H. Potential Funding Sources

I. Start-up and Scale-up Challenges

The ICT Rollout Plan was created by Lompoc Transit with assistance from HDR, Engineering Inc., a planning/engineering consultant.

C. Technology Portfolio

Lompoc Transit will procure battery electric vehicles (BEVs) to transition to a 100% zero emission fleet. Lompoc Transit's relatively compact service area and small fleet size (13 cutaways) removes the need to pursue a solution that incorporates Hydrogen Fuel Cell Electric Buses (HFCEBs), which are the other viable technology option for a transition to a 100% zero emission fleet. The transition to an all-BEV fleet will allow Lompoc Transit to maintain consistency across vehicle and infrastructure procurement and workforce training.

The one exception to Lompoc Transit's compact service area is its twice-a-week service to Santa Barbara, a trip of approximately 55 miles each way. It is anticipated that through coordination with the Santa Barbara Transit Center, this vehicle could charged at the Santa Barbara Transit Center, eliminating the need for an extra vehicle to complete the round-trip route.

Lompoc Transit recently completed a feasibility analysis to determine the impact that zero-emission vehicle (ZEV) technology may have on Lompoc's existing service. The feasibility analysis studied several factors, including slope and grade of the bus routes, number of vehicle stops, anticipated roadway traffic, and ambient temperature. This analysis helped Lompoc Transit understand its power needs and range for each schedule block by day, while evaluating different charging scenarios.

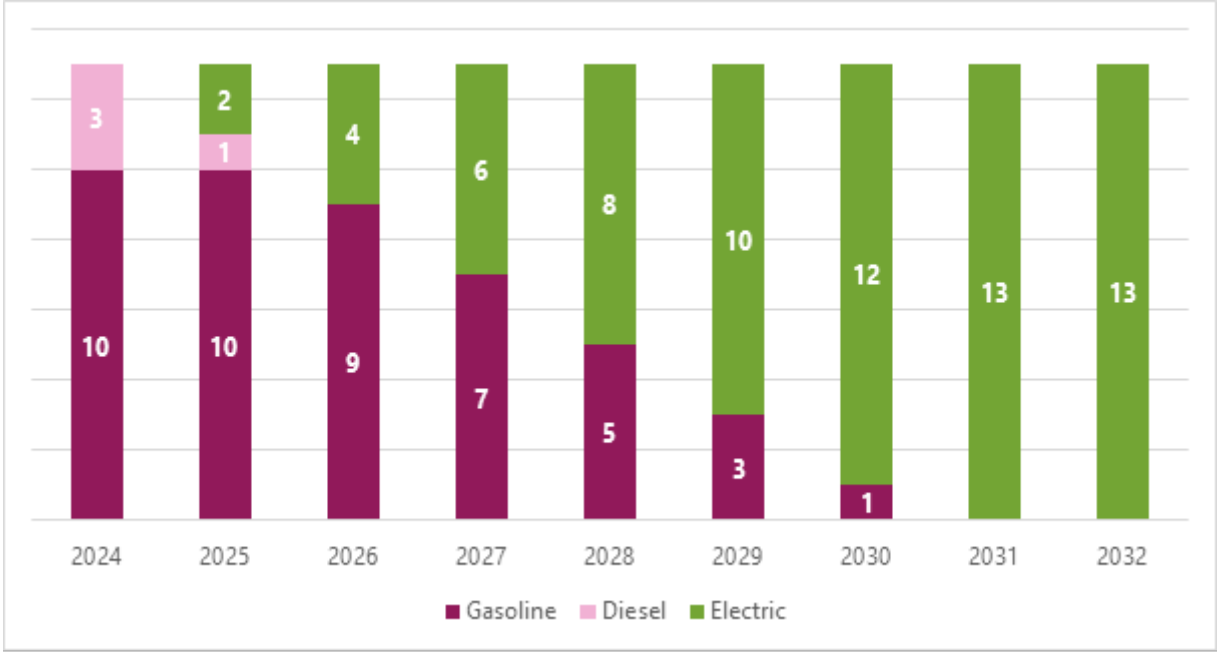
D. Current Fleet and Future Purchases

The energy modeling and analysis identified two fleet transition scenarios: one with charging at the depot only, and a second with both depot and en-route charging at two locations. Based on the impacts to operations by implementing depot chargers only, Lompoc Transit will pursue a solution that includes both depot and en-route charging. By implementing en-route chargers, the peak power demand, total energy, and fleet size is significantly less than if only depot chargers were implemented.

The transition would begin in 2025 with the purchase of the first two BEVs, and all future vehicle replacements will be electric. Regardless of vehicle age, Lompoc Transit will replace two vehicles per year and will replace the oldest two vehicles each year. In 2031, the last BEV will be purchased, completing the fleet transition to 100% electric.

Vehicle Number	Model Year	Body Builder Model	Seats	Length	Fuel Type
0193	2012	ElDorado Aero Elite 320	30	34'	Diesel
0194	2012	ElDorado Aero Elite 320	30	34'	Diesel
0195	2015	ElDorado Aero Elite 280	18	28'	Diesel
11171	2017	Glaval Titian II	18	28'	Gasoline
11172	2017	Glaval Titian II	18	28'	Gasoline
11175	2017	Glaval Titian II	18	28'	Gasoline
12171	2017	Glaval Titian II	18	28'	Gasoline
11173	2017	Glaval Titian II	18	28'	Gasoline
11174	2017	Glaval Titian II	18	28'	Gasoline
12172	2017	Glaval Titian II	18	28'	Gasoline
19091	2019	Glaval Universal	18	28'	Gasoline
19082	2019	Glaval Entourage	25	34'	Gasoline

Lompoc Transit Existing Fleet Roster



Fleet Composition by Fuel Type

Capital costs necessary for this transition include the costs of purchasing BEVs along with the depot and en-route charging infrastructure necessary to power the fleet. The table below highlights key assumptions and inputs used to generate annual capital expenses and reflects the following:

- **Vehicle Costs**: An average gasoline/diesel vehicle cost was provided by the City of Lompoc. The replacement EV cost, for the modeled GreenPower EVStar+, is priced based on existing market information.
- **Charging Equipment**: The EV fleet requires chargers at both the depot and the en-route facilities; these chargers have unit and implementation costs.
- **Utility Infrastructure**: In addition to the chargers, infrastructure to support the chargers is needed. The depot and en-route facilities require new transformers, switchboards, cabling, etc. These costs are summed together and modeled as a singular unit cost for each location that is incurred before the transition begins.

	Value	Source
Gasoline Vehicle Price	$193,000	City of Lompoc
Diesel Vehicle Price	$193,000	City of Lompoc
Electric Vehicle Price	$250,000	HDR EV Market Analysis
EV Useful Life	8 Years	GreenPower EV Warranty
7.2 kW Level 2 Charger	$7,500	HDR EV Charger Market Analysis
65 kW Inductive Charger	$68,750	InductEV Wireless Charging Cost Estimate

Capital Cost Assumptions (2023 $)

Lompoc Transit will utilize the funding sources identified in Section H to implement this plan.

E. Facilities and Infrastructure Modifications

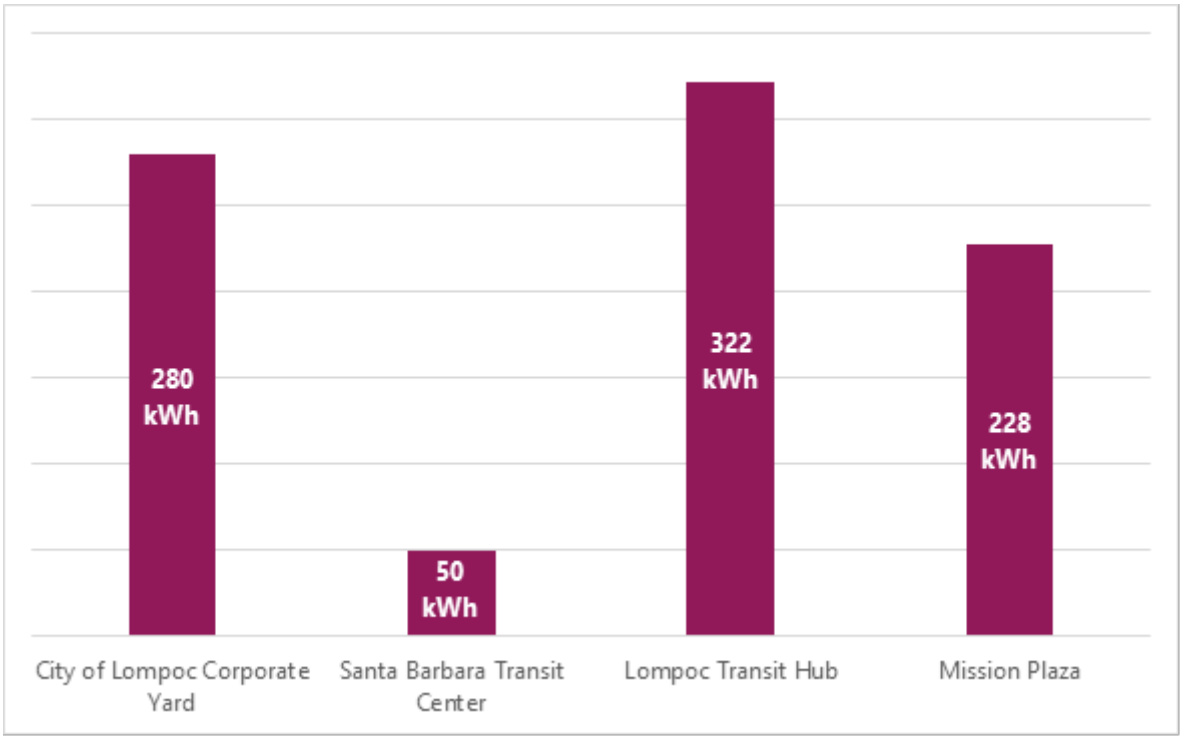
Lompoc Transit will pursue both depot and en-route chargers. Two en-route chargers are required at the Lompoc Transit Hub and one en-route charger is required at Mission Plaza. The en-route chargers sit idle for at least 80% of the time. At both Lompoc Transit Hub and Mission Plaza, zero chargers would be in use for 20 hours per day. However, the 4 hours of charging that is provided are critical to the success implementation of the zero-emission mobility fleet.

The feasibility analysis modeled with a GreenPower EV Star + cutaway BEV, which can charge using the wireless inductive charging specified for en-route charging.

There are four locations within the Lompoc Transit service area that will require charging:

- City of Lompoc Corporate Yard – Depot Charging (Level 2 Charging)
- Santa Barbara Transit Center – Depot Charging (65 KW DCFC OR Level 2 Charging)
- Lompoc Transit Hub – En-route Charging (Wireless Inductive Charging)
- Mission Plaza – En-route Charging (Wireless Inductive Charging)

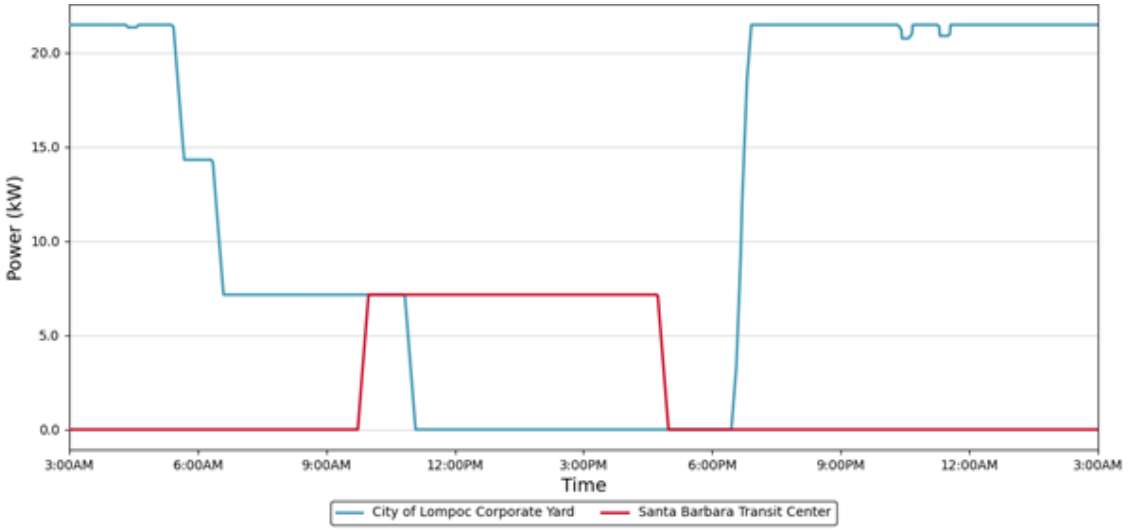
Below is the maximum amount of energy supplied daily at each of the four locations.



Depot and En-route Charging Maximum Daily Energy Supplied by Location

Depot Charging Locations

The two depot charging locations for Lompoc Transit are the City of Lompoc Corporate Yard, and the Santa Barbara Transit Center. The chart below highlights the hourly maximum daily power needs at each depot station.



Maximum Daily Power Profile By Hour at Each Depot

City of Lompoc Corporate Yard

The City of Lompoc Corporate Yard is located at 1300 West Laurel Avenue, and is where Lompoc Transit's fleet domiciles overnight. The City of Lompoc Corporate Yard will install 7.2 KW Level 2 chargers to meet the needs of its fleet. The Level 2 chargers will be utilized primarily for overnight charging.

Santa Barbara Transit Center

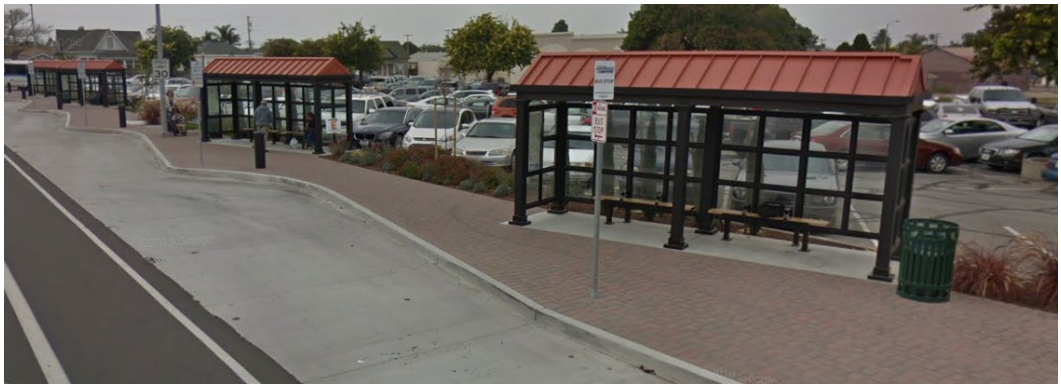
The Santa Barbara Transit Center is located at 1020 Chapala Street in Downtown Santa Barbara. Depot charging here would need to be utilized on Tuesday and Thursday to service the single-round trip service from Lompoc to Santa Barbara. The vehicle travels to the City of Lompoc Corporate Yard in the morning, sits for several hours at the Santa Barbara Transit Center, and then returns to the City of Lompoc in the afternoon. The vehicle can accept 7.2 KW Level 2 charging or a 65 KW DCFC, whichever is available at Santa Barbara.

En-route Charger Locations

Layover times in the existing schedule were used to identify potential locations for en-route chargers. Potential installation at Lompoc Transit Center and Mission Plaza would improve the feasibility of a BEV fleet transition without the need to significantly scale to a larger fleet. Lompoc Transit's fleet is comprised of cutaway buses, so en-route charging needs to be either wireless inductive chargers or plug-in chargers. Either wireless charging or plug-in charging would be installed in the public right of way and would require coordination with the City of Lompoc.

Lompoc Transit Hub

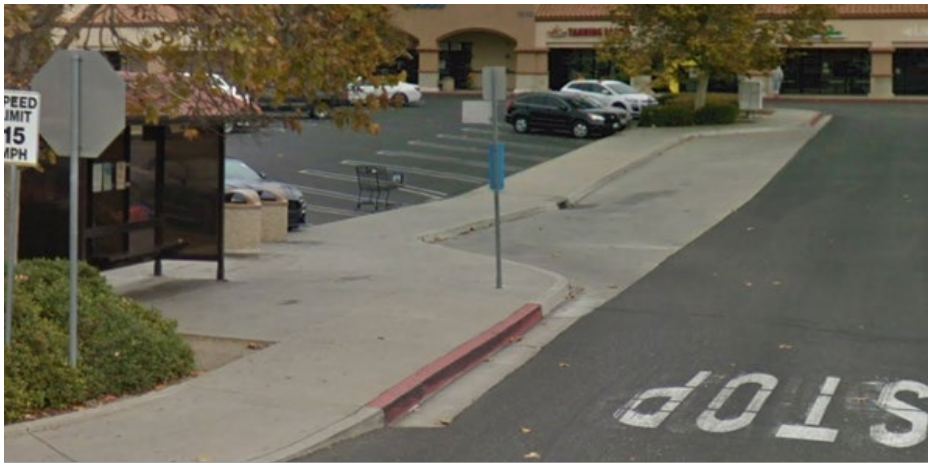
Lompoc Transit Hub is located on W Cypress Ave between South I Street and South J Street in Lompoc and is served by Routes 1, 2, 3, and the Wine Country Express (WCE). The total weekly layover time at this stop is 98.7 hours – 17.1 hours per day on weekdays and 13.2 hours on Saturdays; on average, an en-route charging event would be 7 minutes and 42 seconds.



Lompoc Transit Hub Street View

Mission Plaza

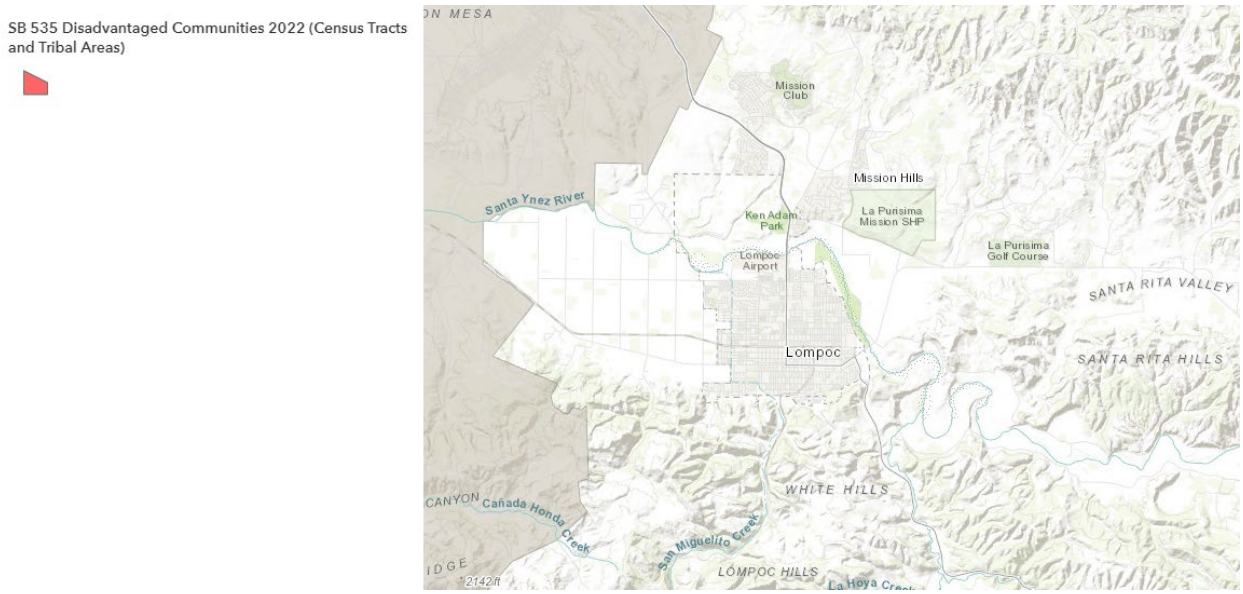
Mission Plaza is located within a shopping center parking lot along Cabrillo Hwy just north of E Central Avenue in Lompoc, CA 93436 and is served by Routes 1, 2, 3, and 4. There is a total weekly layover time of 41.4 hours – 7.3 hours per day on weekdays and 4.9 hours on Saturdays; on average, an en-route charging event would be 7 minutes and 46 seconds.



Mission Plaza Street View

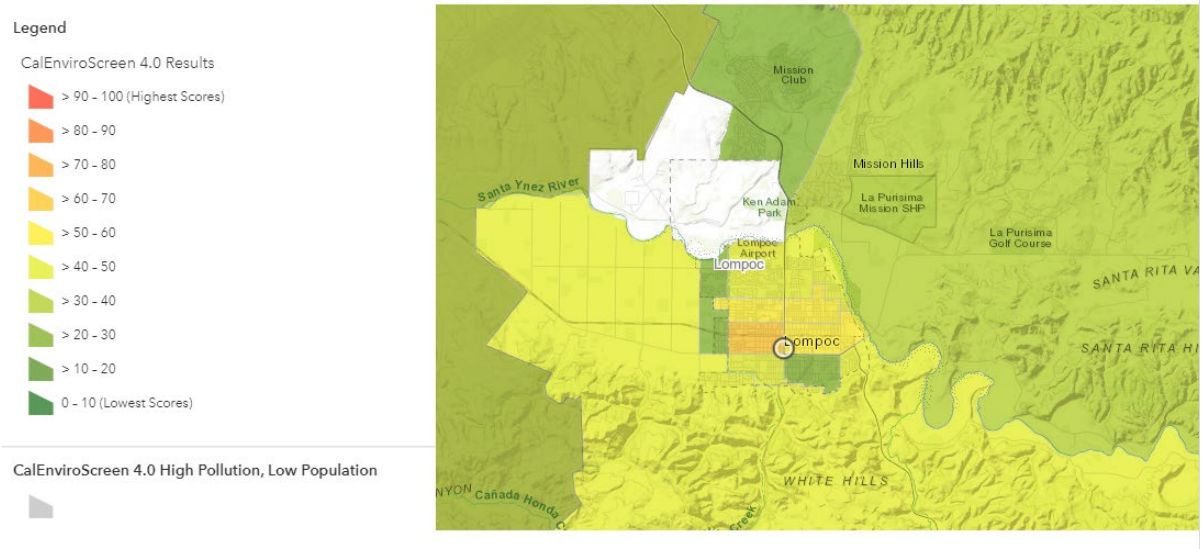
F. Service in Disadvantaged Communities

CalEnviroScreen SB 535 Disadvantaged Communities (State): In 2012, the State of California passed SB 535 directing that 25 percent of the proceeds from the Greenhouse Gas Reduction Fund go to projects that provide a benefit to disadvantaged communities. There are no identified SB 535 Disadvantaged communities located within the Lompoc Service Area.



SB 535 Disadvantaged Communities (2022 Update) - CalEPA

In addition, the CalEnviroScreen is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution. As highlighted below, Census Tract 2702 in the center of Lompoc ranks in the 69th percentile of census tracts in California for pollution. Tract 2702 is served by Lompoc Transit Routes 1,2 and 3, and will be aided significantly in the transition to zero-emission vehicles.



Census Tract 2702

G. Workforce Development

Lompoc Transit's transition to zero emissions vehicles will require workforce training and development for bus operators, bus maintenance staff, and operations support. Lompoc Transit's staff is small (maintenance is performed by one contract mechanic), so processes and training will be well documented to minimize knowledge gaps with future staff transitions. Training resources for staff will be drawn from a variety of sources, including:

- Vehicle and charger OEM training curriculum as new chargers and vehicles are procured.
- Vehicle sub-system/sub-component OEM training curriculum.
- Partnership with City of Lompoc and regional first responding agencies.

Lompoc Transit can draw on best-practices from state and federal transit associations to assist with the workforce to zero emission vehicles. The following associations may be consulted for additional curriculum, training, and expertise:

- American Public Transportation Association (APTA)
- California Transit Association (CTA)
- California Association for Coordinated Transportation (CalAct)
- Center for Transportation and the Environment (CTE)
- Zero Emissions Bus Resource Alliance (ZEBRA)

H. Potential Funding Sources

Lompoc Transit will pursue a variety of funding sources to implement its zero-emissions fleet transition by 2031. The funding sources that Lompoc Transit will explore will include, but are not limited to, the following:

- FTA Funding:
    - Section 5307: Urbanized Area Formula Grants
    - Section 5339(a): Formula Program for Buses and Bus Facilities
    - Section 5339(b): Grant Program for Buses and Bus Facilities
    - Section 5339(c): Low-No Emission Vehicle Grant Program
- State Transportation Funding:
    - State Transit Programs (STIP) - SB1 Local Partnership Program (LPP)
    - Caltrans State of Good Repair (STA SOGR)
    - Active Transportation Program (ATP)
- State Climate Investments:
    - Transit and Intercity Rail Capital Program (TIRCP)
    - Low Carbon Transit Operation Program (LCTOP)
    - Affordable Housing and Sustainable Communities Program (AHSC)
    - Clean Truck and Bus Vouchers (HVIP)

- Volkswagen Environmental Mitigation Trust
- Carl Moyer Memorial Air Quality Standards Attainment Program

I. Start-up and Scale-up Challenges

Lompoc Transit is committed to implementing its vision of a 100% zero emission fleet according to the schedule outlined in this plan. This transition will require close coordination with external partners including local utilities, various City of Lompoc government agencies, outside OEM and charging infrastructure vendors, and partner transit agencies such as the Santa Barbara Transit agency. It will also require a change in Lompoc Transit's internal day-to-day operations in order to continue seamless transit services to its riders. Lompoc Transit remains committed to overcoming the inevitable obstacles that will arise with the adoption of new technologies and systems.

This ICT Transit plan lays out the vision for Lompoc's transition to a 100% zero emission fleet. The zero-emissions mobility space is evolving rapidly – as such Lompoc Transit will stay up to date on changes in industry best practices and technology and will update this plan accordingly.