



# Zero-Emission Bus Rollout Plan



## Section A. Transit Agency Information

City of Carson  
701 E Carson St.  
Carson, CA 90745

Air District: South Coast Air Quality Management District  
Air Basin: South Coast

Total Number of Buses in Annual Maximum Service: 4

For questions regarding this Rollout Plan:

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The City of Carson is not part of a Joint Group.

## Section B. Rollout Plan General Information

The City of Carson (the “City”) has a goal of fully transitioning to a zero-emission bus fleet well ahead of the 2040 deadline. The City intends to operate 100% Battery-Electric Buses (BEBs) by 2032. This endeavor will not trigger early retirement of any conventional transit buses. A copy of Resolution No. 23-072 of the Carson City Council can be referenced in Appendix A.

## Section C. Technology Portfolio

The City plans to purchase a total of four BEBs by 2032 to replace existing compressed natural gas (CNG) and diesel buses. This would complete the City’s transition to a zero-emission fleet based on the current fleet of four conventional buses.

The City also plans to procure four charging stations to charge BEBs overnight and during midday layovers.

## Section D. Current Bus Fleet Composition and Future Purchases

The City operates the Carson Circuit to provide riders with connections to major destinations and lines from neighboring transit agencies. The service is offered in the form of two routes: A and B. Two CNG buses serve as primary vehicles for providing service, one bus for each route. Two diesel buses serve as back-ups to the CNG buses.

## Individual Bus Information of Current Bus Fleet

Number of Buses	Engine Model Year	Bus Model Year	Fuel Type	Bus Type
2	2015	2016	Diesel	Cutaway
1	2016	2016	CNG	Cutaway
1	2017	2017	CNG	Standard

The City intends to replace its two diesel buses with two cutaway BEBs to start. The BEBs will be built to provide seating for up to 12 passengers and securements for two wheelchairs.

Delivery of the first two units is estimated to take place by December of 2023. Due to limited space at the City's Corporate yard, and to meet National Transit Database (NTD) useful life benchmarks, the final two units will be ordered in 2030-31, thus completing the City's transition by 2032.

The City does not have any plans to convert conventional buses to zero-emission technologies.

## Future Bus Purchases

Timeline (Year)	Total Buses to Purchase	ZEB Purchases	Percentage of Annual ZEB Purchases	ZEB Bus Type	ZEB Fuel Type	Conv. Bus Purchases	Percentage of Annual Conv. Bus Purchases	Type of Conv. Buses
2023	2	2	100%	Cutaway	Electricity	0	0	-
2024	0	0	-	-	-	0	0	-
2025	0	0	-	-	-	0	0	-
2026	0	0	-	-	-	0	0	-
2027	0	0	-	-	-	0	0	-
2028	0	0	-	-	-	0	0	-
2029	0	0	-	-	-	0	0	-
2030	0	0	-	-	-	0	0	-
2031	2	2	100%	Cutaway	Electricity	0	0	-

## Section E. Facilities and Infrastructure Modifications

The City will have to make modifications at its Corporate Yard to accommodate the transition to zero-emission.

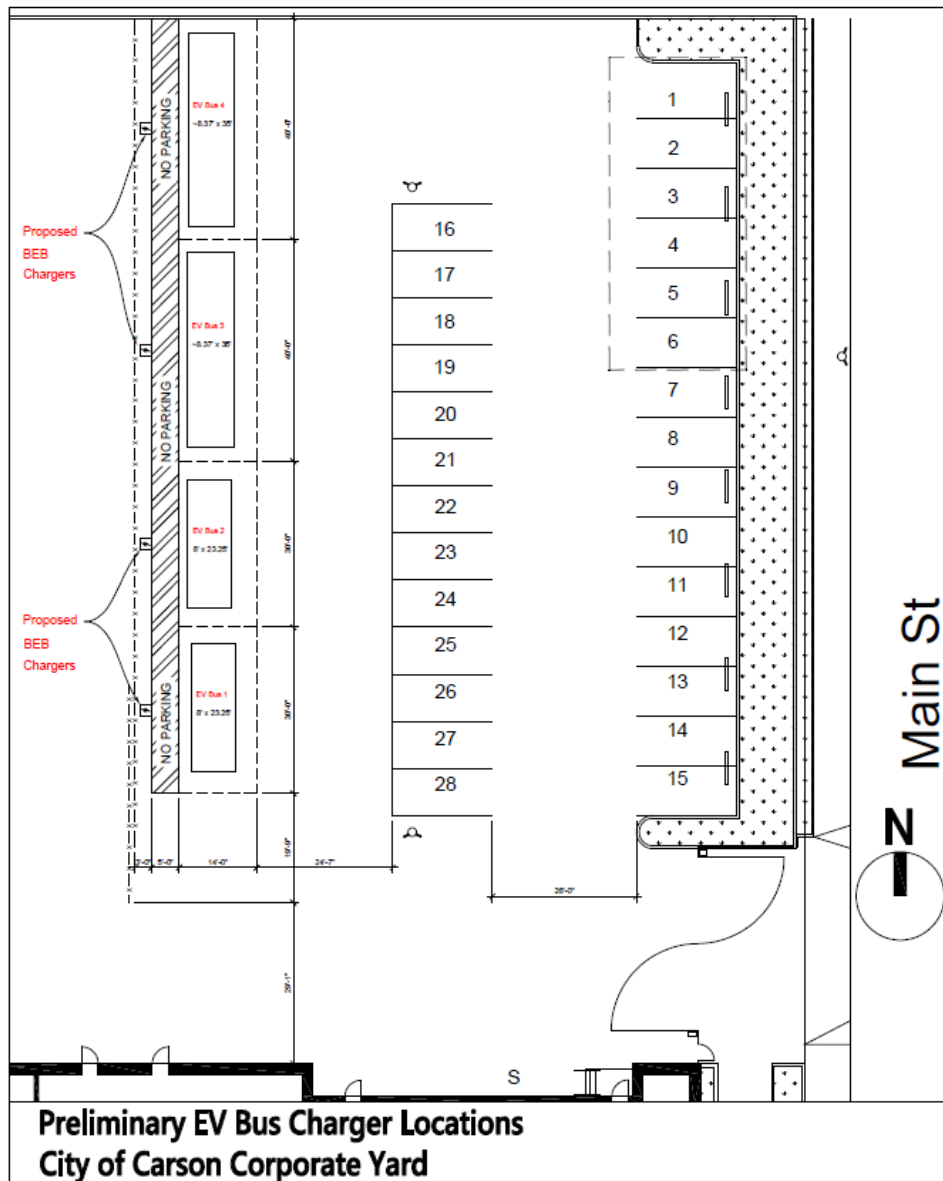
The following table outlines site location, functions, needed infrastructure, and timeline.



## Facilities and Infrastructure Modification

Facility Name	Address	Main Function	Types of Infrastructure	Service Capacity (Buses)	Needs Upgrade	Estimated Construction Time
City Corporate Yard	18601 S Main St. Gardena, CA 90248	Facilities/storage for City Services	New battery electric charging infrastructure	4	Yes	By 2025

Current bus parking will be relocated within the same yard to assume new parking spaces that will be allocated for new charging stations. One bus parking space will be allocated per charging station. Additional spaces will not be necessary to accommodate the transition. Electric utilities are provided by Southern California Edison.



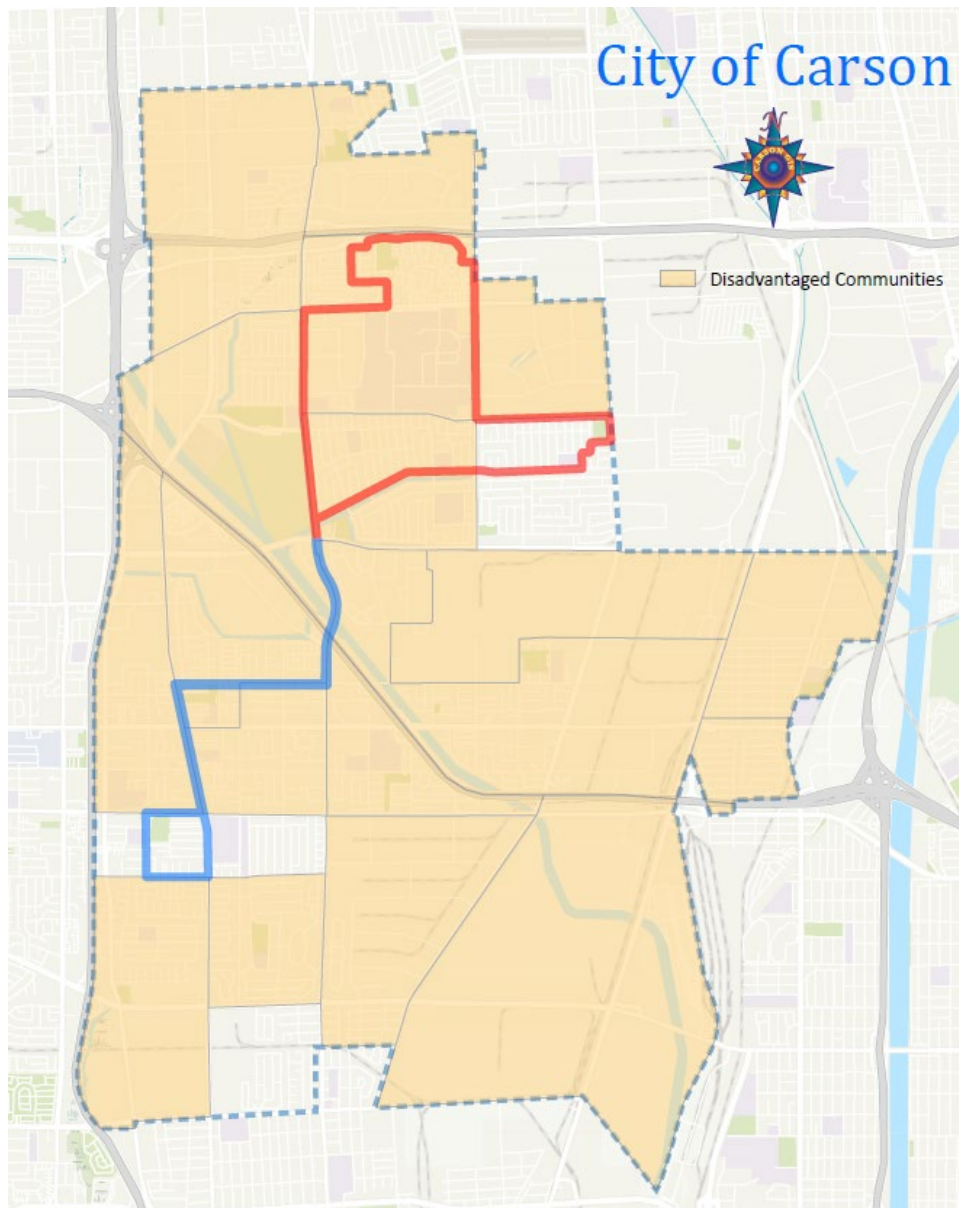
## Section F. Providing Service in Disadvantaged Communities

According to California Office of Environmental Health Hazard Assessment (OEHHA), the City serves one or more disadvantaged communities as listed in the latest version of CalEnviroScreen.

### Service in Disadvantaged Communities (DAC)

Facility Name	Address	No. of DAC-serving Routes	DAC-serving Routes
Carson Corporate Yard	18601 S Main St. Gardena, CA 90248	2	A, B

The replacement of the City's conventional buses with BEBs will instantly reduce noise and harmful pollutants along Routes A and B, both of which service multiple disadvantaged communities.



## Section G. Workforce Training

Workforce training around the City's first two BEBs will be led by sales and service staff from the respective bus dealership. Future training for the remaining two BEBs will be provided in similar fashion.

City staff will regularly seek supplemental training opportunities on specialized BEB-related topics and/or refresher training through local resources.

## Section H. Potential Funding Sources

The City intends to utilize a variety of potential funding sources to fund the acquisition of zero-emission technologies as outlined below:

<b>Fund/Grant</b>	<b>Level of Government</b>	<b>Description</b>	<b>Applicability</b>
Charge Ready	State/Southern CA Edison	Charge Ready can cover installation costs for electric infrastructure and rebates for charging stations.	City has applied for this program to acquire necessary infrastructure plus four charging stations.
HVIP	State/CARB	HVIP is a voucher program designed to reduce purchasing costs of ZEBs through coordination of a participating HVIP dealership.	City intends to engage participating HVIP dealerships to help fund procurement of BEBs.
AB2766 Air Quality Improvement	Regional/AQMD	City receives a per capita allocation of vehicle license fees through South Coast AQMD for use towards pollution-reducing initiatives.	City intends to utilize AB2766 allocations to help fund procurement of BEBs.
Proposition A and C Local Returns	County/LA Metro	City receives a per capita allocation of Los Angeles County sales tax through LA Metro for use towards developing and/or improving public transit.	City intends to utilize Prop A and C local returns to help fund procurement of BEBs.

## Section I. Start-up and Scale-up Challenges

The transition to zero-emission technologies comes with substantial start-up costs. As a relatively small transit workgroup, the City will continue to seek regional and state funding opportunities as requirements for federal funding tend to suit the needs and competencies of larger transit agencies. The City hopes to alleviate fiscal impact through lower maintenance costs which tend to come with BEBs. However, as BEB are relatively new to the market, unexpected repairs and issues with initial units may reduce the City's ability to realize such savings. The City hopes improvements and breakthroughs in battery technology will lead to price reductions of future BEBs.

## Appendix A – Resolution No. 23-072