Electric School Bus Replacement Program

Advanced Fuels and Vehicle Technologies Office
Fuels and Transportation Division
California Energy Commission
March 17, 2020

Program Components and Funding

Three complementary funding components:

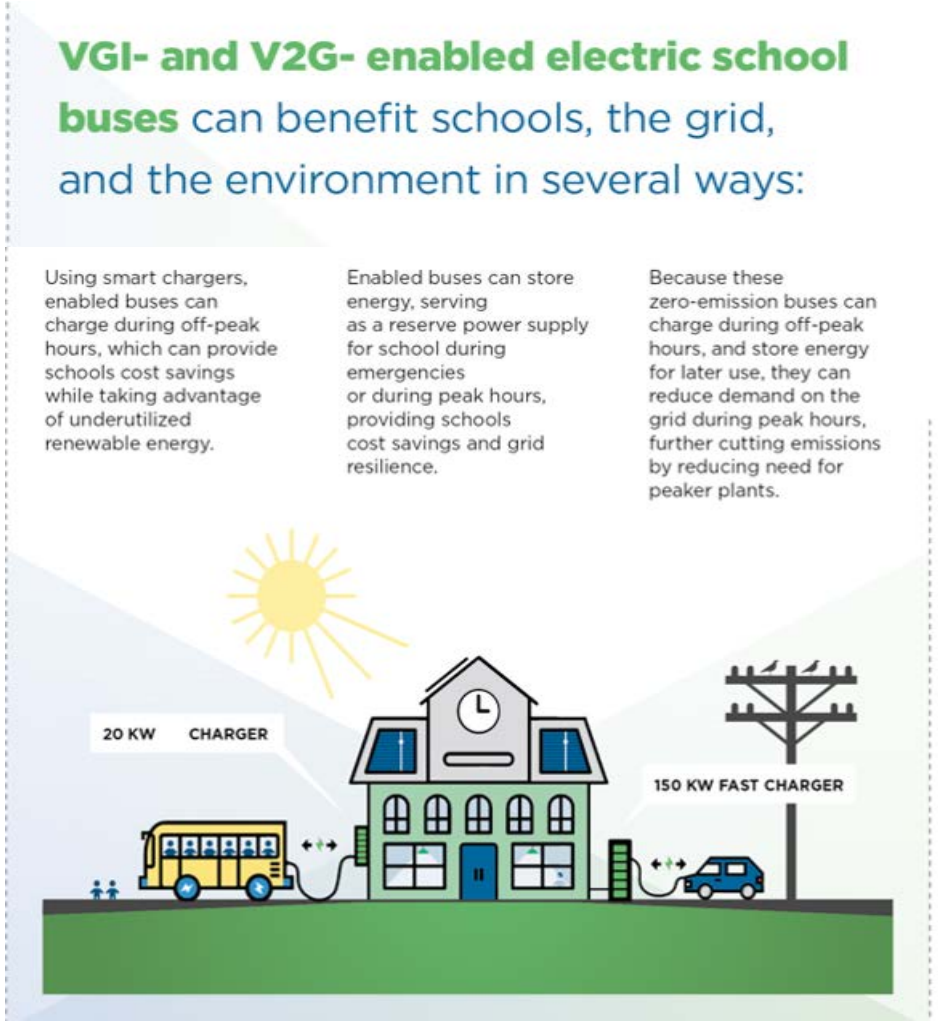
1. School Bus Replacement: to replace the oldest, dirtiest diesel school buses with battery electric school buses - *$75 million* (SB 110)
2. Charging Infrastructure - *$14 million* (Clean Transportation Program)
3. Workforce Training - *$1 million* (Clean Transportation Program)

Recipient Criteria

- Eligible applicants: school districts, county offices of education, and joint power authorities
- Priority given to the oldest school buses, school buses operating in disadvantaged communities, and to schools with a majority of students eligible for free or reduced-price meals in the prior year
- Any replaced school bus must be scrapped

School Bus Requirements

- Battery Range
  - o Type A – 70 Miles
  - o Type C and Type D – 100 Miles
- Capacity
  - o Type A – 16 Students
  - o Type C – 44 Students
  - o Type D – 70 Students
- Vehicle-to-Grid Capability (V2G)



Manufacturers Awarded

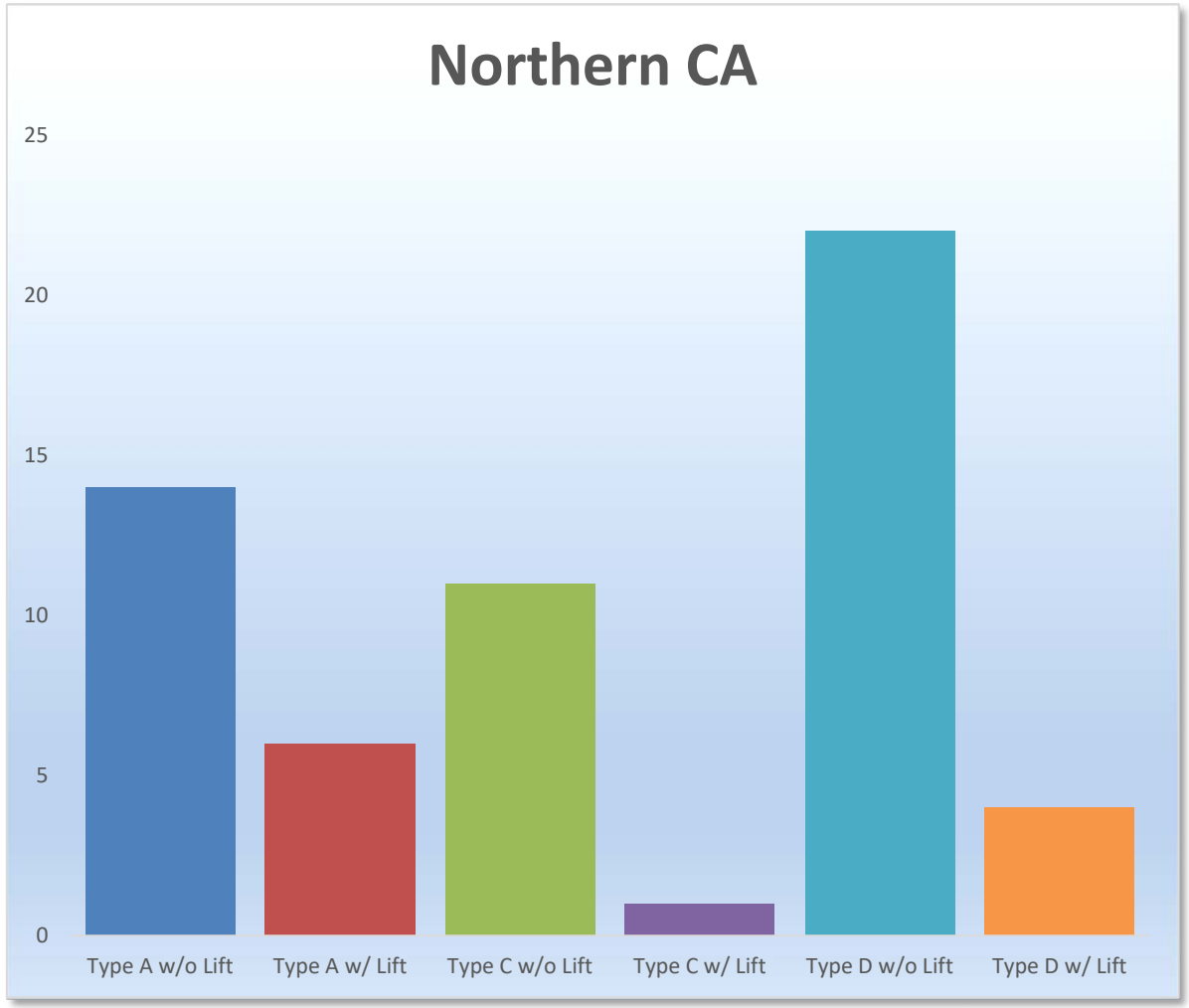
- Awardees
  - o The Lion Electric Co.
  - o A – Z Bus Sales, Inc.
- Bulk Purchase Price Solicitation
  - o $6,148 Per Seat

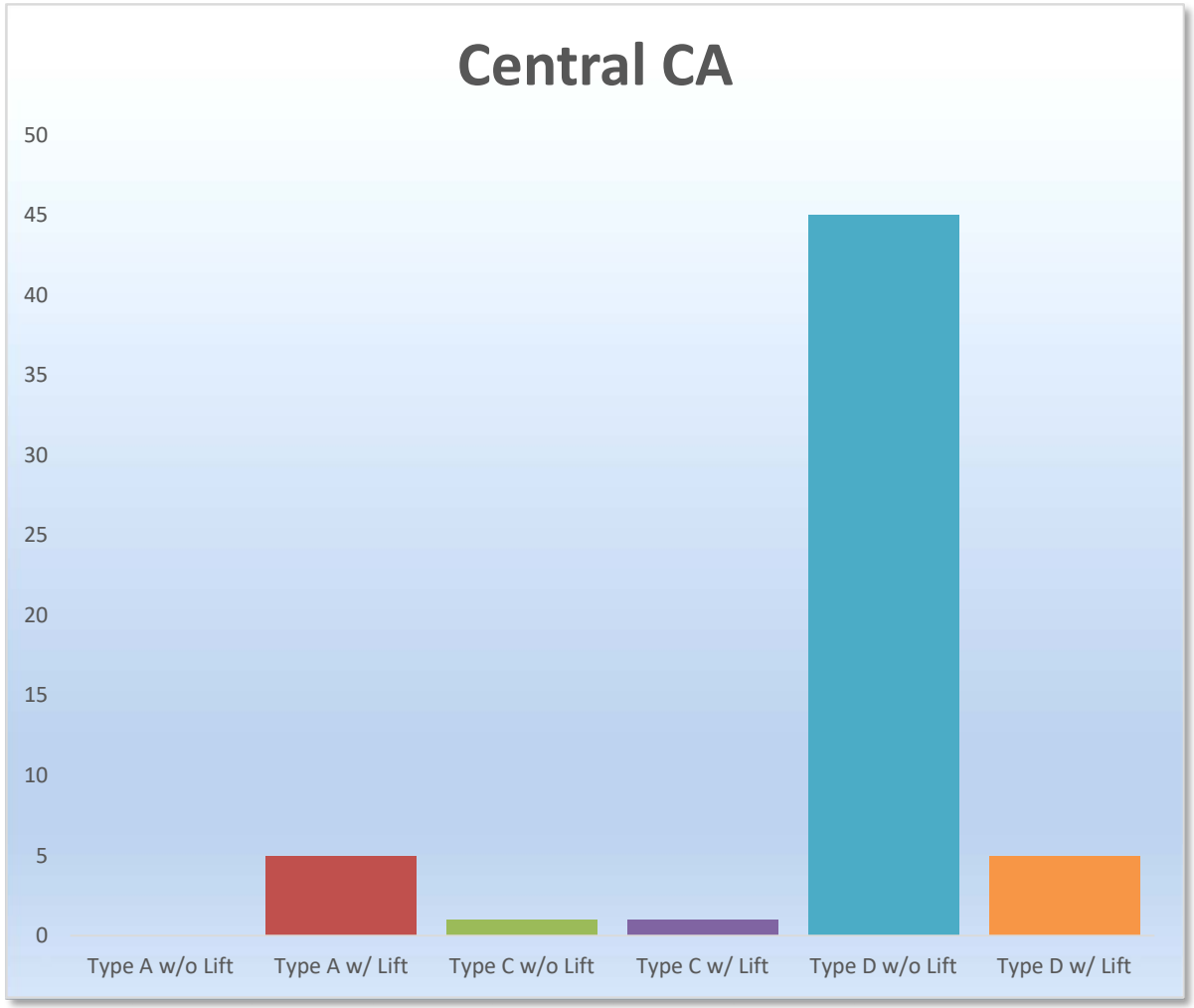
Applicant	Type of Bus	Bid
The Lion Electric Co.	Type A without Chair Lift	$269,489
A-Z Bus Sales, Inc. (Micro Bird)	Type A with Chair Lift	$291,524
The Lion Electric Co.	Type C without Chair Lift	$319,284
The Lion Electric Co.	Type C with Chair Lift	$327,727
The Lion Electric Co.	Type D without Chair Lift	$330,109
The Lion Electric Co.	Type D with Chair Lift	$337,470

Completed Deliveries

- Completed Deliveries
  - Baldwin Park Unified School District
  - Colton Joint Unified School District
  - Durham Unified School District
  - Savanna School District
  - Traver Joint Elementary School District
  - Twin Rivers Unified School District

Bus Type by Region





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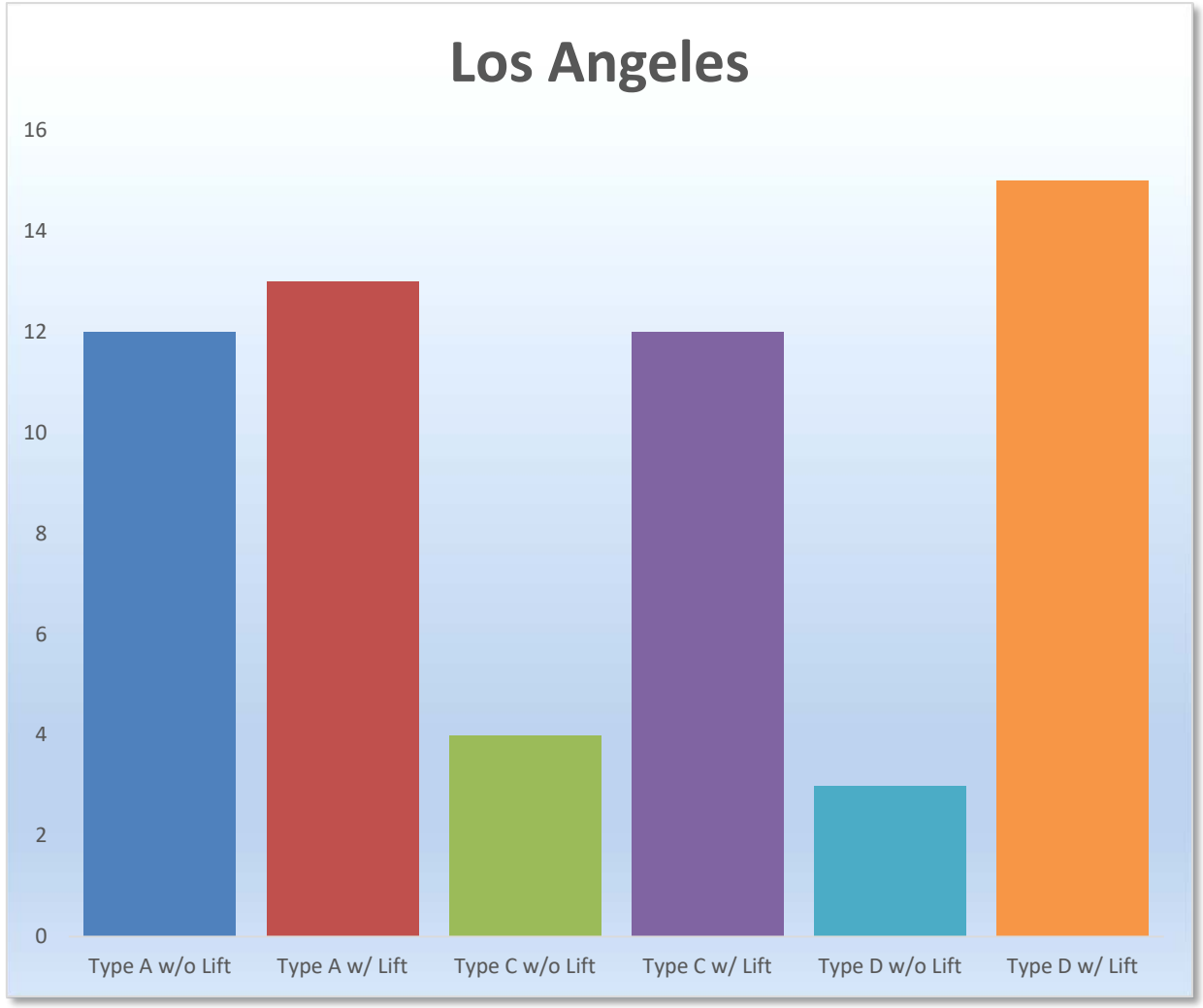
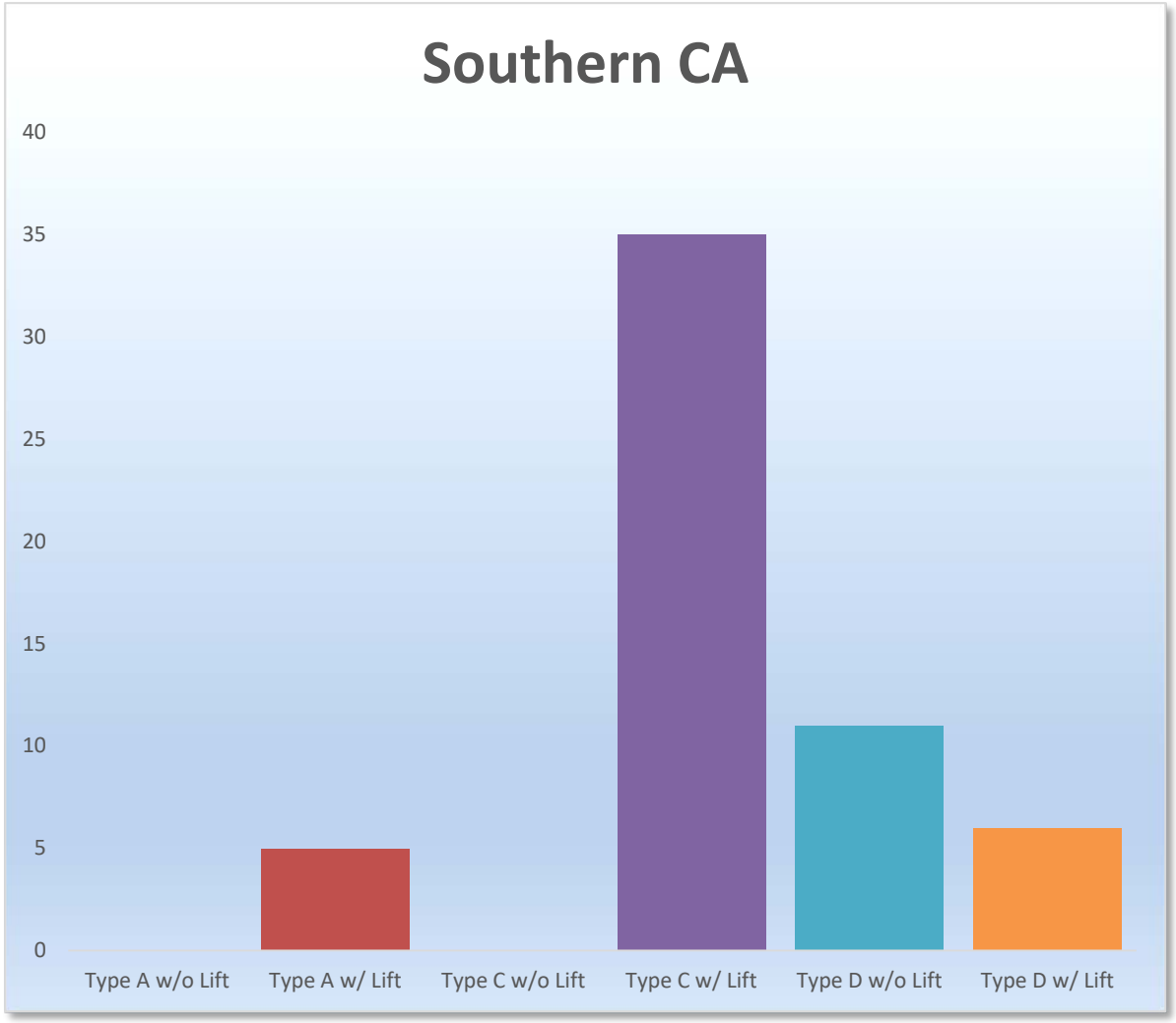




Delivery Timeline

Bus Delivery Schedule	
Cumulative Percentage of Delivered Buses	**Delivery Date**
5%*	12/31/2019
25%	12/31/2020
50%	12/31/2021
100%	9/30/2022

*Delivery Target Met

Workforce Development

- “Electric School Bus Training Project” with community colleges for training of maintenance technicians and bus operators
- Training topics include high voltage safety, troubleshooting, and proper operation of electric buses
- Training schedules and curricula are currently in development
- Long-term bus electrification training through community colleges for certification and degrees

Data Collection/Future Metrics

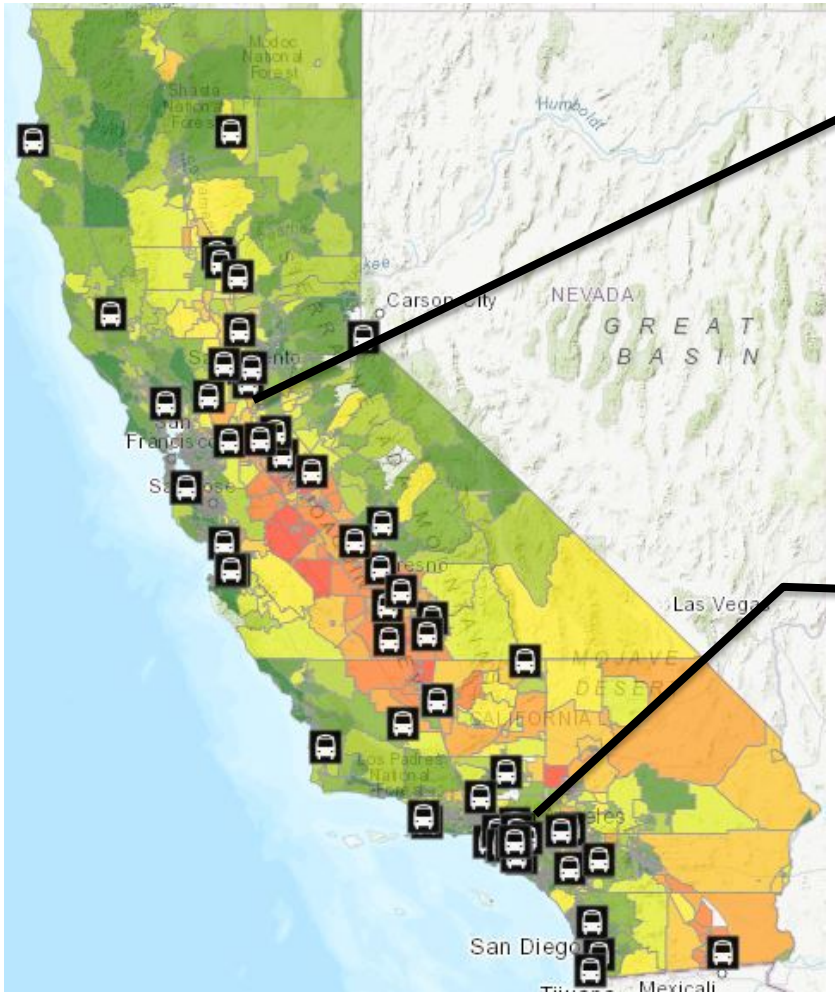
- Maintenance Costs
  - o Diesel Bus Being Replaced
  - o Electric Bus
- Fuel Efficiency of Replaced Diesel Vehicle
  - o Average Cost of Diesel Fuel
- Electric Bus Efficiency
  - o Average Cost of Electricity
- Telematics
  - o Route Efficiency Data
  - o Future Program Planning

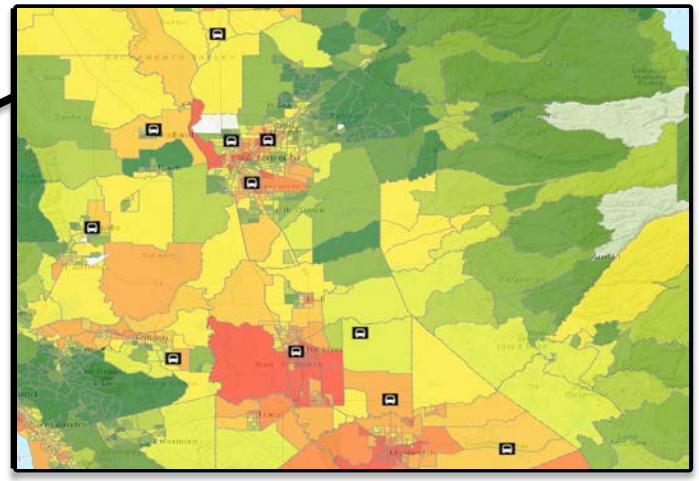
Distribution of Recipients Based on CalEnviroscreen 3.0

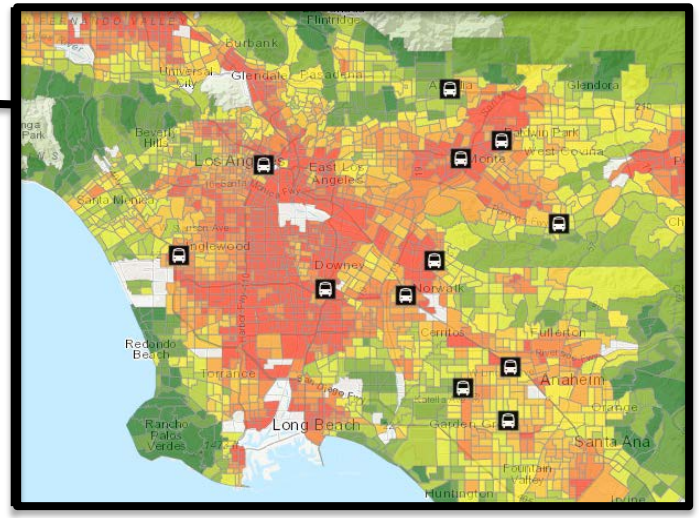
School Bus Recipients

CalEnviroScreen 3.0 Score

- 91 - 100% (Highest Scores)
- 81 - 90%
- 71 - 80%
- 61 - 70%
- 51 - 60%
- 41 - 50%
- 31 - 40%
- 21 - 30%
- 11 - 20%
- 1 - 10% (Lowest Scores)







Distribution of Recipients Based on CalFire Tier 2 and 3 Fire Threat

School Bus Recipient

CalFire Tier2 Fire Threat

CalFire Tier 3 Fire Threat