School Bus Replacement Program

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Agenda

- Background
- Proposed Design Concept
- Proposed Implementation of Design Concepts
- Q & A

Twin Rivers Unified School District

Program Goals and Objectives

- Follow SB 110 and Governor's Executive Order
- Children’s health and safety
- Allocation scheme that best provides a level of funding equity
- Build the future supporting network of advanced next generation infrastructure
- Position as many schools with the options to embrace next generation zero emission vehicles
- GHG and air quality benefits

Senate Bill 110

- Funding: $75 million
- Eligible applicants: school districts and county offices of education (COE).
- Priority should be given to the oldest school buses, or school buses operating in disadvantaged communities and to schools that have a majority of students eligible for free or reduced-price meals in the prior year.
- Any school bus replaced shall be scrapped.

Proposed Design Concept

Comprehensive Design:

- School bus replacement (2 Phases)

  Phase 1: Identify list of buses eligible for replacement.
  Phase 2: Solicit manufacturers to design, construct, and deliver the replacement buses to school districts.

- Provide EV fueling infrastructure to support bus and future expansion.

- Provide workforce training and development for EV buses.

Phase 1: Identify list of buses eligible for replacement

- Conduct a competitive solicitation for school districts/COE
- Awards will be made to school districts in ranked order until all funds available are exhausted.
- Funds will go directly to the eligible school districts to purchase the buses identified in their application.
- School districts will purchase their buses directly from the bus manufacturer(s) who competitively wins the Energy Commission award.
- Funds pay for 100% of the standard bus (either all Energy Commission funds or leveraged with other sources).

Phase 2: Manufacturing Buses

- Conduct a competitive solicitation for school bus manufacturers.

- Manufacturers will submit applications demonstrating the degree to which they can fulfill the bus list needs.
  - Applications will describe the type(s) of bus available, number of buses that can be produced, cost of buses (including bulk pricing if available), and timing for delivery of buses.
  - Other criteria may include: location of manufacturing facility (in California?), opportunities to leverage funding (such as HVIP eligibility), status of CHP certification, standard features available for buses, and warranty options available.

Phase 2: Manufacturing Buses

- Awarded manufacturers will enter into an agreement with the Energy Commission for the construction of a specified number and type of buses.

- School districts will pay manufacturers directly with Energy Commission grant funding.

Accomplishments to Date

- ✓ Focus Group Meetings
- ✓ Public Workshops:
  - Sacramento February 14, 2018
  - Los Angeles February 20, 2018
  - Clovis February 21, 2018
- ✓ School Bus Replacement Program Web Page
  http://www.energy.ca.gov/transportation/schoolbus/index.htm
- ✓ Call Center Hotline (855) 279-6381

Workshop Input Requested

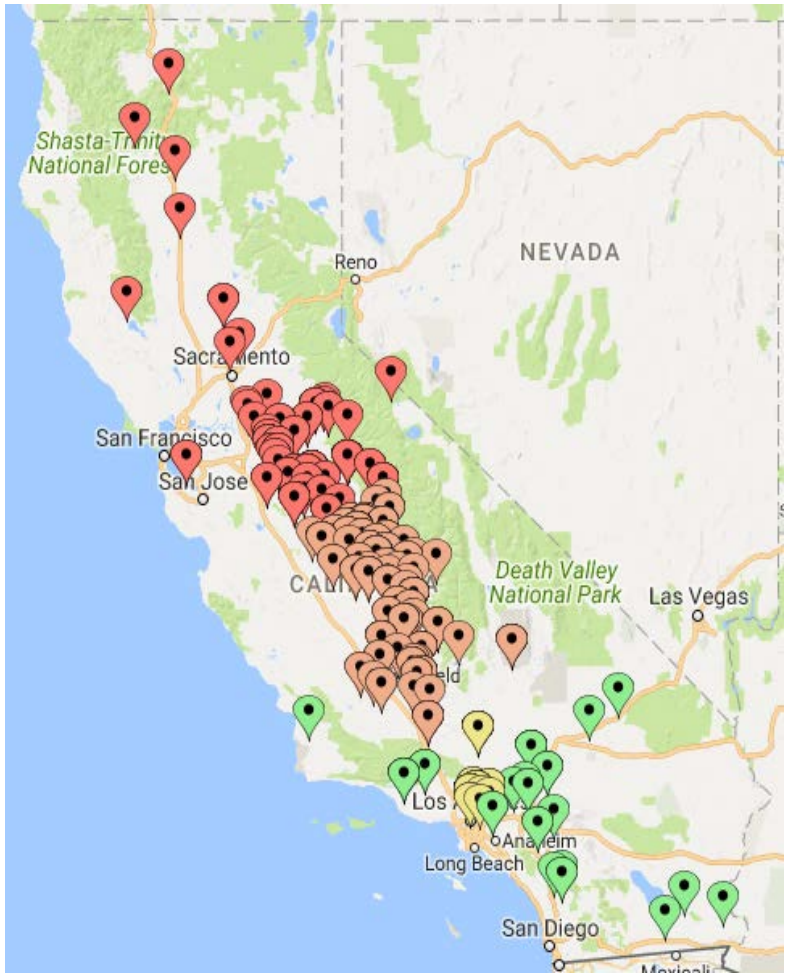
Major issues under consideration:

- How to identify the oldest buses?
- How to distribute the funding awards?
- What type of bus replacements should we allow?

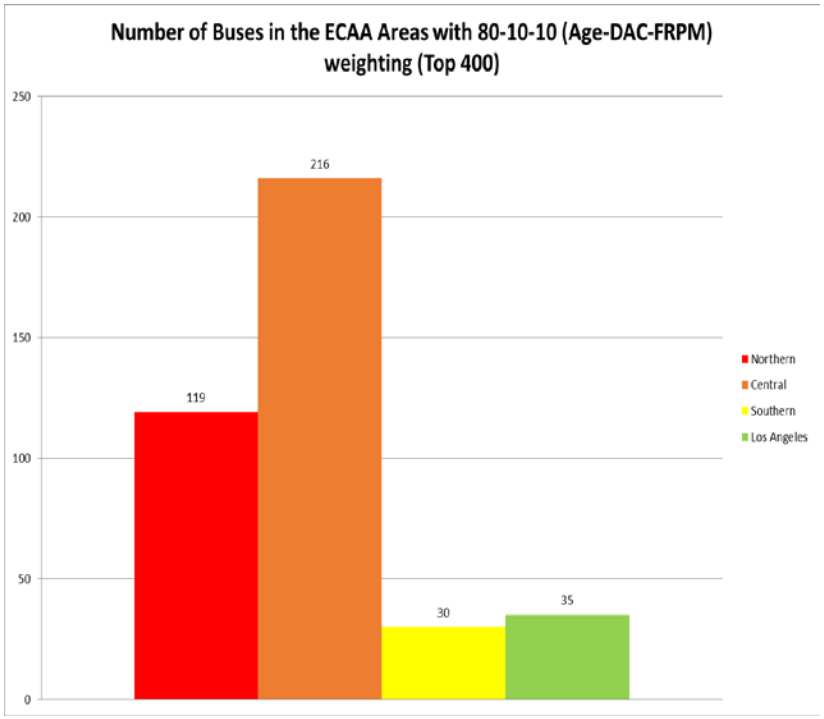
Scenario 1

- Distribute funds evenly within the four regions established by Prop 39.
- Approximately $18.75 million will be allocated to each region.
- Priority will be given to the oldest school buses, with extra points for buses operating in disadvantaged communities and with a majority of the students eligible for free or reduced-price meals.

Scenario 2



Distribute funds to the highest ranked school buses.



Other Workshop Questions Asked

- Which solicitation structure/option is preferred?
- Is there anything missing from the proposed approach?
- What should be included in the standard features of a bus?
- What type of infrastructure will you need to support your replacement bus?
- What type of training and development will you need to support your replacement bus?

Summary of Public Comments

- 24 letters to the docket
- 55 specific comments

Top Comment Categories:

1. Geographical distribution
2. Type of bus replacement
3. Mechanism on how to rank the buses

Emphasizing Electric School Buses

1. Benefits Children's Health
2. Lowered Emissions
3. Quieter Smoother Ride
4. Charging Overnight
5. Lower Maintenance
6. Lower Fuel Cost
7. Potential Vehicle to Grid

Cost Savings of Electric Buses

- Electric School Buses are an emerging technology…

  ✓ They have a higher up-front front capitol cost compared to mature technologies.

  ✓ But… have much lower annual operations and maintenance costs!

Cost	Diesel	CNG	Electric
Maintenance	$9,075	$3,360	$1,770
Fuel	$5,930	$5,000	$2,714
Total	**$15,005**	**$8,360**	**$4,484**

- This program will cover the up-front capitol costs, passing on the annual O&M cost savings to the school districts, while replacing an older bus with a clean new one!

Available Electric Buses

Thomas

TransTech

eLion

GreenPower

BlueBird

Size and Types of Buses

Manufacturer	Type	Seating	Range (miles)	Availability
Greenpower	Synapse 72	72	75-140	2017
Greenpower	Synapse Shuttle	48	75-140	2018
Greenpower	Synapse Shuttle	30	75-140	2018
Trans Tech	Motiv SST	18-25	80-100	2013
Blue Bird	Type C	75	80-100	2018
Blue Bird	Type D	78-81	80-100	2018
Blue Bird	Micro Bird G5	<30	80-100	2018
Daimler	Jouley	81	80-100	2019

Infrastructure

Charging Systems

Manufacturer	Bus Type	Charging Standard	Battery Size in kWh	KWh per mile	Charging Power	Average charging time (hours)	Ave. Range (miles)
Blue Bird Corporation	D C	Level 2 J1772	150 100 – 150	1.5		8	100
Blue Bird – Girardin	A	Level 2 J1772				6.5	100
Thomas Built	C	Level 2 J1772	100 – 160	1 – 1.6		8	100
Trans Tech	A	Level 2 J1772				8	80
Lion Electric	C	Level 2 J1772	130	1.3 – 2.6	19.2	4 – 6	50 – 100
Green Power Motor	D	Level 2 J1772 DC Fast CCS	100 – 200	0.71 – 1.43	22 150	8 1	140
Starcraft Bus	C	Level 2 J1772	106 – 127	1.25 – 1.49	25	8	85
Motiv	A C	Level 2 Meltric DR100	85 – 106 85 – 127	0.94 – 1.18 0.94 – 1.41	29	8	90

Workforce Training and Development

- Alternative & Renewable Fuel & Vehicle Technology Program (ARFVTP) Funds.
- Determine training & development needs.
- Work with Community Colleges and Schools to develop a program and curriculum to meet needs.

Proposed Schedule

Activity	Date
Solicitation release and workshops	May – June 2018
Funding Available	July 1, 2018
Business meetings	August – September 2018
Bus deliveries	TBD

Stay Connected

List Server:

- http://www.energy.ca.gov/transportation/schoolbus/index.html
- Follow instructions in bottom left corner.

Contact:

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School Bus Hotline:

(855) 279-6381