CITYBUS ZERO-EMISSION BUS ROLLOUT PLAN

as mandated by the California Air Resources Board

City Council
June 6, 2023

Presenters:
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Transportation and Public Works – Transit

Zero-Emission Bus Rollout Plan Overview

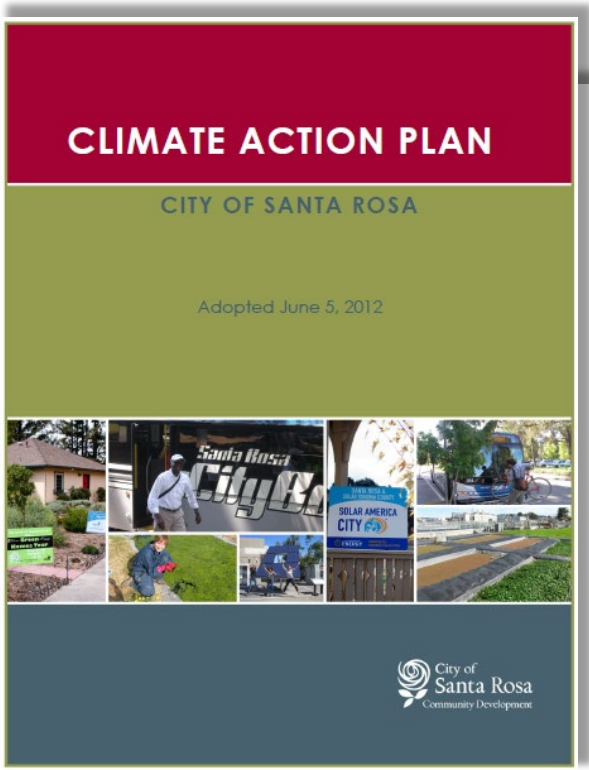
- Required by California Air Resources Board for all public transit operators
  - Mandate for transition to zero emissions bus (ZEB) fleets established in the Innovative Clean Transit (ICT) regulation
- Includes fixed-route buses and paratransit cutaway vehicles
- Separately, FTA also requires grantees to adopt a Zero-Emission Transition Plan
- Proposal: CityBus to transition its 29-bus fixed-route fleet to battery-electric buses (BEB) by 2035

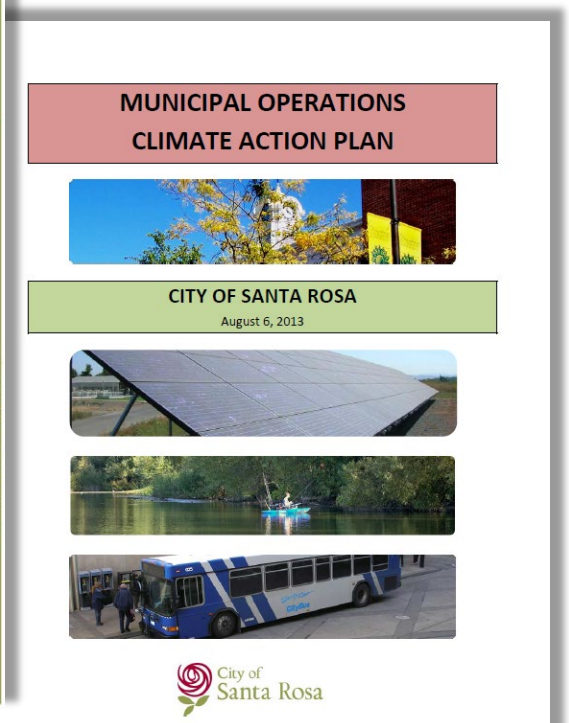
CALIFORNIA
AIR RESOURCES BOARD

Federal Transit Administration

Section A: Transit Agency Information

- Basic Information about agency
  - Fleet size
  - Service Area
  - Agency's Air Districts
  - # of Buses in Maximum Service
  - Sustainability Plans and Goals
    - 2005 GHG reduction target
    - 2012 Climate Action Plans
    - 2020 Declaration of Climate Emergency
    - CityBus Short-Range Transit Plan





Santa Rosa CityBus

Sonoma Clean Power

Section B: Rollout Plan General Information

- Who created Rollout Plan?
- Cost of creating it?
- Documentation of Board Approval
- Full ZEB transition date

2018	**CARB passed ICT Rule requiring conversion to ZEB fleet**
2023	**CityBus first BEBs in service; ZEB Rollout Plan due to CARB**
2027	**70% Fixed Route fleet will be electrified**
2029	**ICT states 100% of new bus purchases must be ZEBs**
2035	**100% of fixed route fleet and 75% of cutaway fleet will be electrified.**
2040	**ICT requires full ZEB Fleet**

Section C: Technology Portfolio

- Type of ZEBs and why BEBs for CityBus
  - Vehicle Range of Operations Needed
  - 100% Local Renewable Power

EverGreen
Provided by Sonoma Clean Power

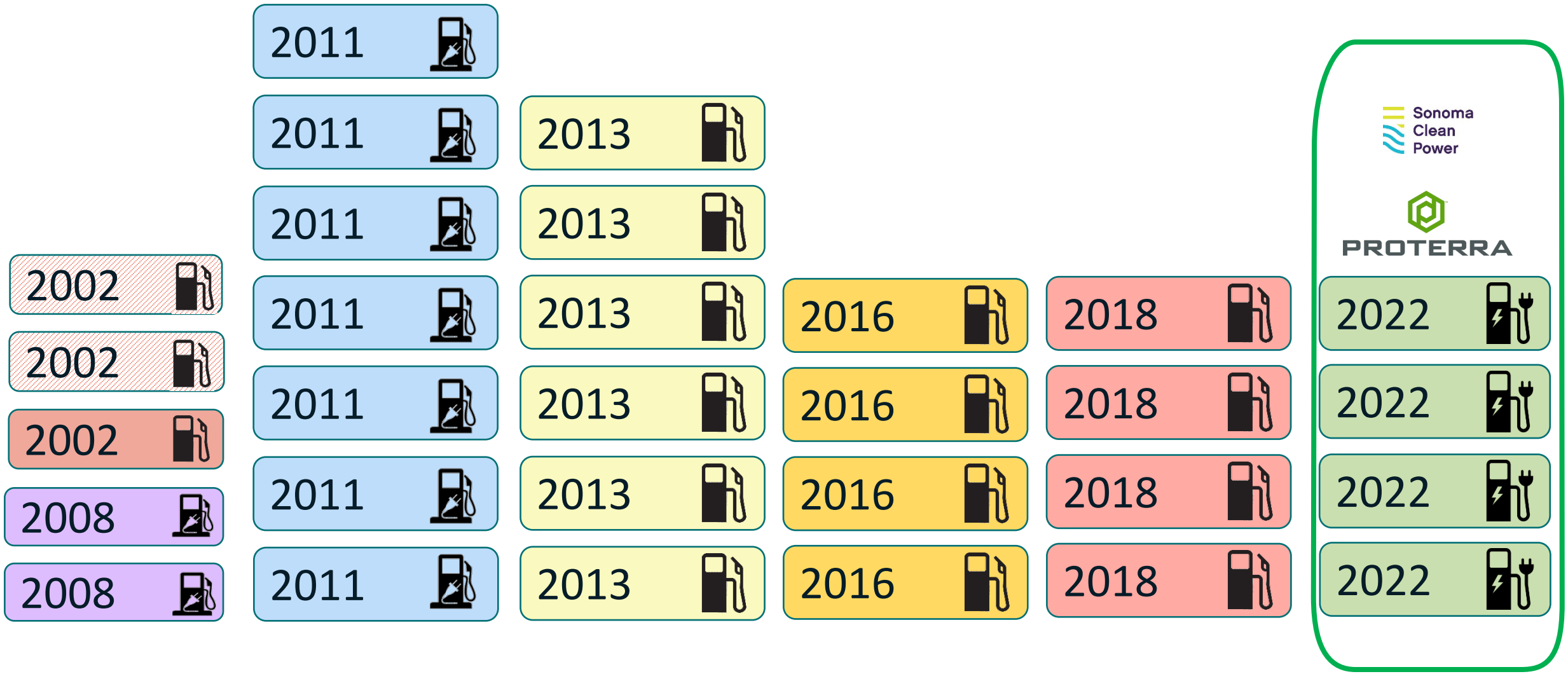
Section D: Current and Future Fleet Composition

- Current and Future Fleet Size
- Bus Procurement Plan and Schedule
- Bus Range Requirements

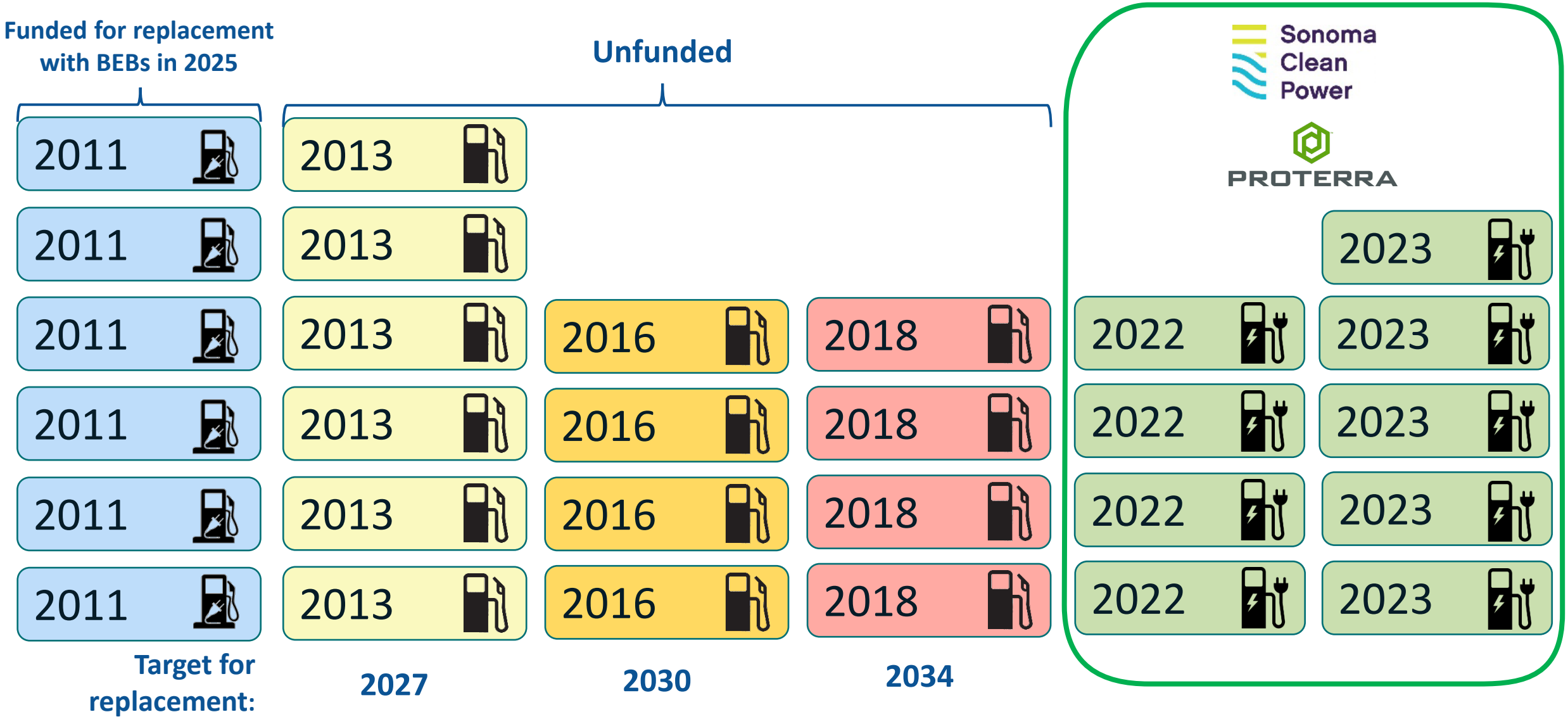
Year	# of NEW ZEB being Purchased	Total BEBs in Fleet	% of fleet electrified	Fixed or Cutaway	Funded	Estimated Cost/Bus
2022	4	4	10%	Fixed	yes	$1,200,000
2023	5	9	22%	Fixed	yes	$1,400,000
2025	6	15	37%	Fixed	yes	$1,500,000
2027	6	21	51%	Fixed	application submitted	$1,500,000
2030	4	25	61%	Fixed	unfunded	$1,500,000
2032	4	29	71%	cutaway	unfunded	$1,200,000
2034	8	37	90%	Fixed and cutaway	unfunded	$2,700,000
2036	4	41	100%	cutaway	unfunded	$1,200,000

*State and federal funding applications pending

Section D: Current Fleet Composition



Section D: Future Fixed Fleet Composition



Section D: Current/Future Cutaway Fleet Composition

- Federally compliant purchasing mechanism
- Vehicle evaluation and availability
  - Battery sizing, seating, cost, vehicle availability
- Beginning public engagement process
- Vehicles replaced every 7-10 years, re-evaluate BEBs with each purchase
- First cutaway electric vehicle scheduled for 2032 based on current market conditions, charging needs and funding
- Full cutaway electrification 2037

Funded for gas vehicle replacements 2024

2010	2014	2014	2020
2014	2014	2014	2020
2014	2014	2015	2020
2014	2020		

Section E: Facilities and Infrastructure

- Identify Facilities
- Role of Electric Utility
- Current Facilities Assessment
- Planned Fueling Infrastructure

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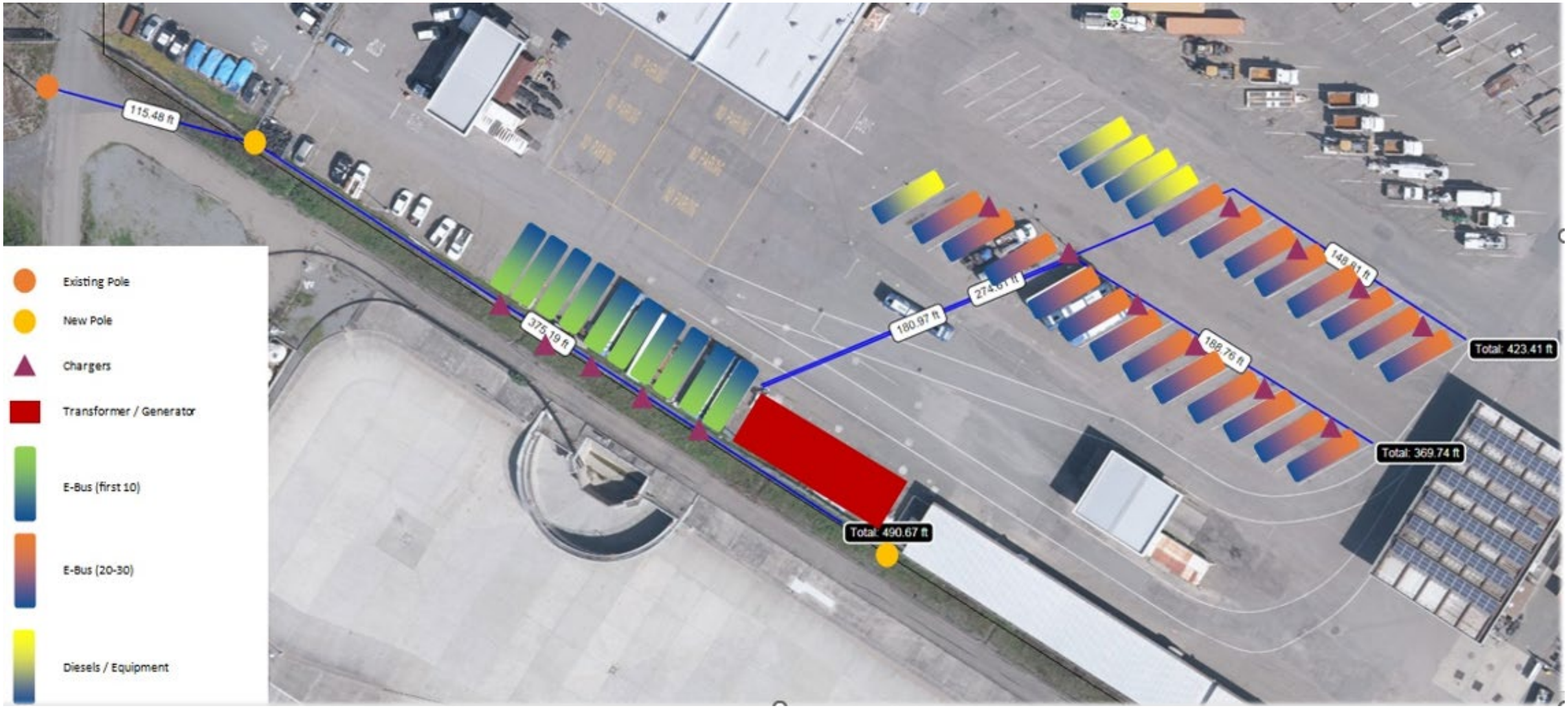


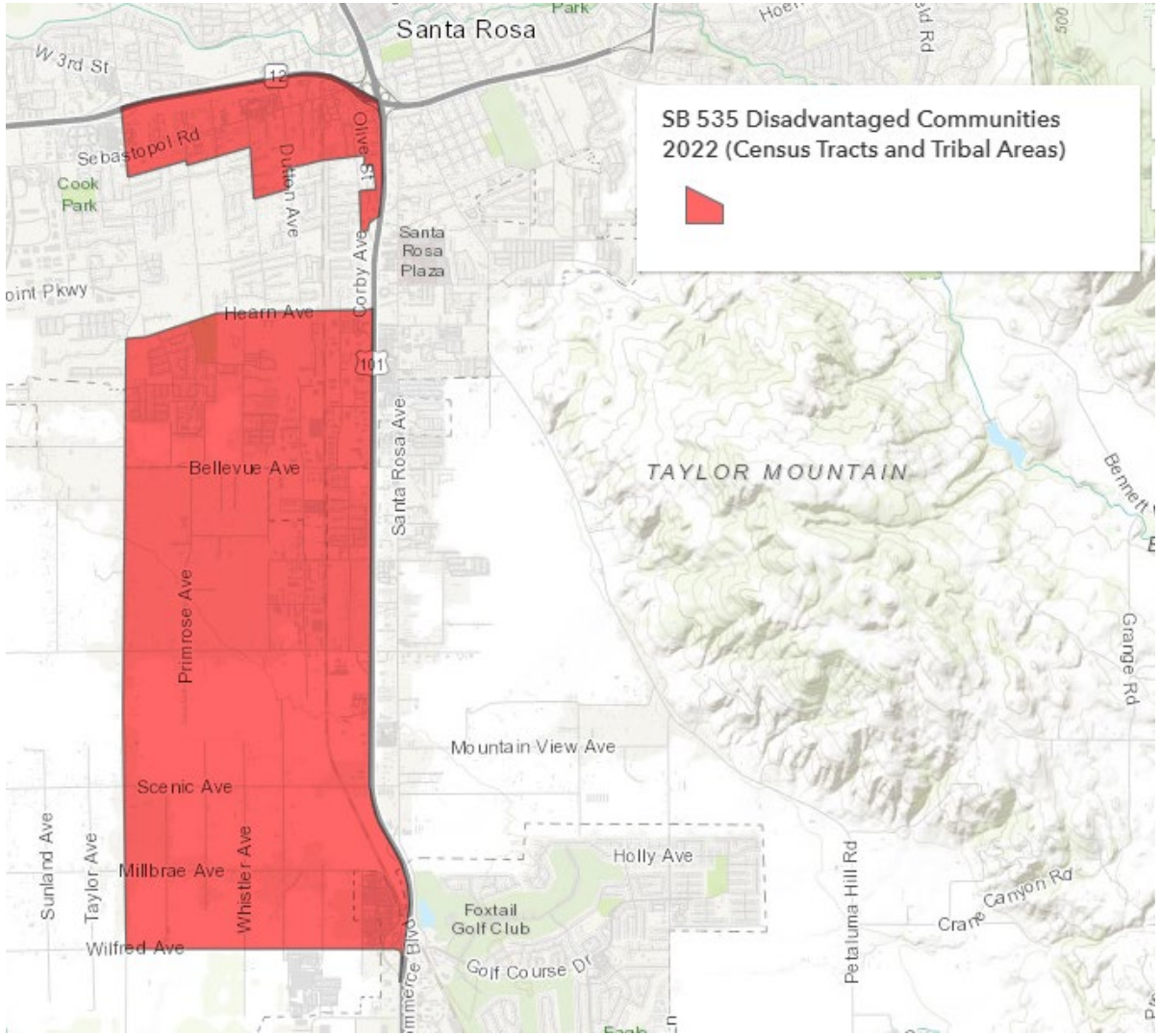
Section E: Facilities and Infrastructure

Phase	Charging Infrastructure	Estimated Timeline	Estimated Cost	Funding
Phase 1	Infrastructure to support 750kWh 3, 150kW- Dual Port	Completed 2022	$800,000	Completed
Phase 1B	2, 150kW- Dual Port	2023	$245,000	Funding Awarded
Phase 2	5, 150kW- Dual Port	2025	$1,499,000	Funding Awarded
Phase 2+ Resiliency	Engineering study, Resiliency, battery back, solar, 5 150kW Dual Port	2025	$4,375,000	Unfunded
Phase 3	3, 150kW- Dual Port	2031-33+	$900,000	Unfunded
Phase 3P	5, 150kW- Triple Port for Paratransit vehicles	2031-35+	$1,500,000	Unfunded

Section F: Providing Service in DACs

- Identify SB 535 Disadvantaged Communities (DACs)
- Deployment of CityBus BEBs in Santa Rosa DACs

Route	Frequency (min.)	2019 Ridership	2022 Ridership
2	30	111,466	68,598
2B	30	139,498	97,937
12	30	96,185	54,482
15	60	59,674	51,561



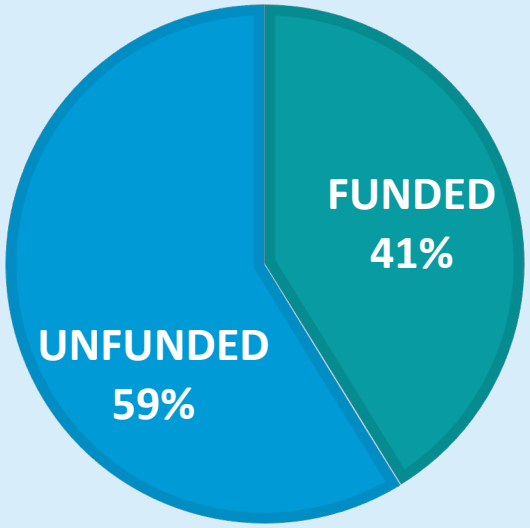
Section G: Workforce Training

- Current Training
- New Training Required for Battery Electric Buses
  - Supervisors
  - Bus Operators
  - Fleet Maintenance staff

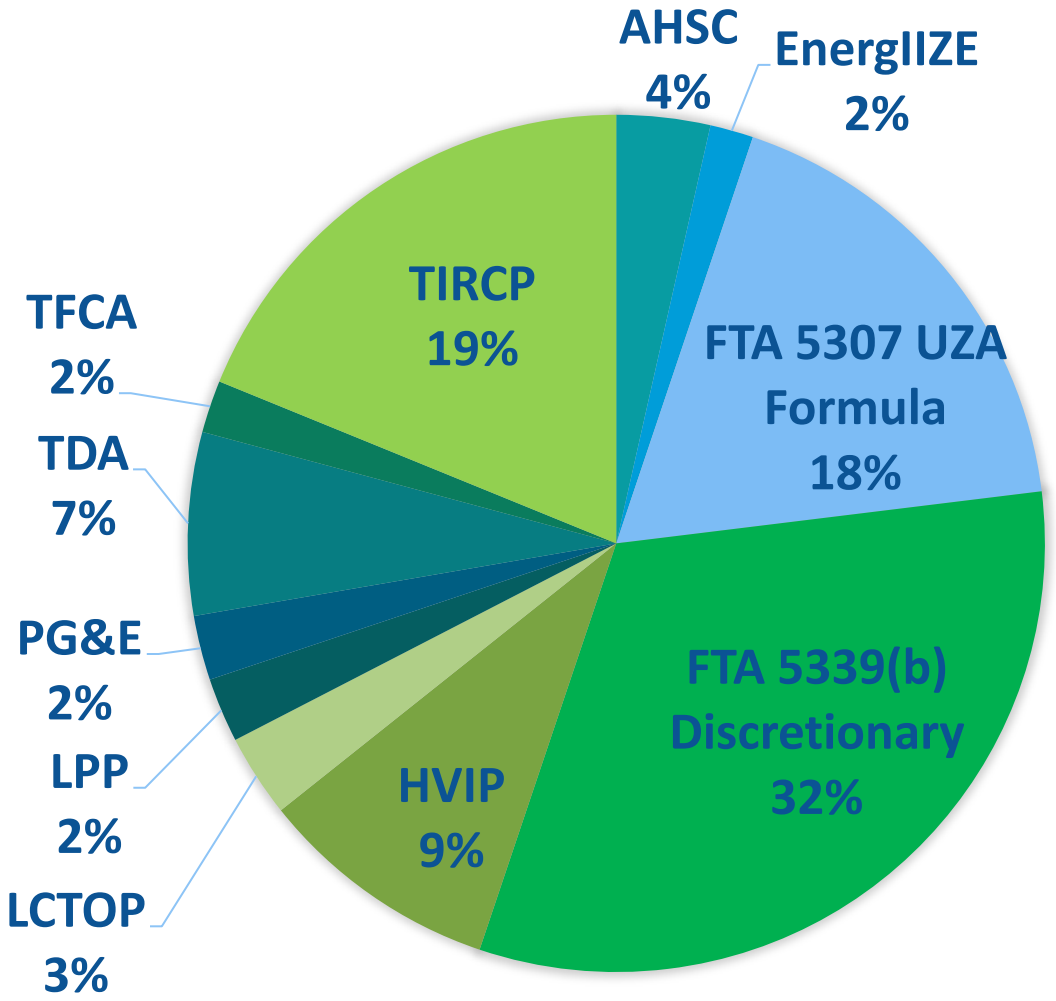
Section H: Potential Funding Sources

Funding Status

- Projected fully electrified fleet: $55M
  - $22M awarded to date



Awarded Funding



Section I: Start-up and Scale-up Challenges

Cost Considerations

- Vehicle and infrastructure costs
- Fueling costs
- Availability of continued funding

Resiliency Considerations

- Battery back-up
- Diesel generator back-up
- Solar generation

Paratransit Fleet Transition

- Near term gasoline purchases likely
- Paratransit BEB market and technology still developing
- Vehicle evaluation needed

Future technologies

- Telematics (real-time bus energy management)
- Charger management software (depot charging enhanced management)

Summary

- Fixed-route fleet electrification required by 2040
- ZEB Rollout Plan must be approved by transit agency governing body
- CityBus estimating full electrification of fixed-route fleet by 2037, 3-years prior to ICT deadline
- $55M projected cost of initial full electrification of fleet
  - $22M in current grant awards
- Next steps:
  - Seek Council approval of ZEB Rollout Plan
  - Submit to CARB by June 30, 2023
  - Update ZEB Rollout Plan as needed
  - Continue to investigate electrification of paratransit fleet