



Framework of the Zero-Emission Rollout Plan

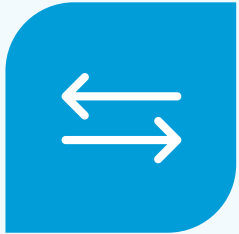
CityBus route to
100% Local Renewable Powered
Operations

Climate Action Subcommittee
August 10, 2022

Presenters:
Yuri Koslen – Transit Planner
Shawn Sosa – Administrative Analyst

Transportation and Public Works – Transit

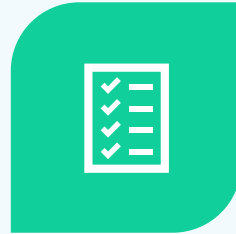
Where we are:



WE KNOW OUR
DIRECTION.



WE KNOW THE
BENEFITS.



WE HAVE DONE
ENOUGH
PLANNING.



WE HAVE FUNDING
TO GET STARTED.



WE ARE STARTING
TO BUILD.

Our direction: Phases

Phase 1

- First funded Grant
- Sonoma Clean Power Study
- PG&E EV Fleet Program
- First 9 battery electric buses (BEB) and 5 dual-port chargers

Phase 2

- Additional
 - 5-10 BEB's
 - 5 dual-port chargers

Resiliency Phase

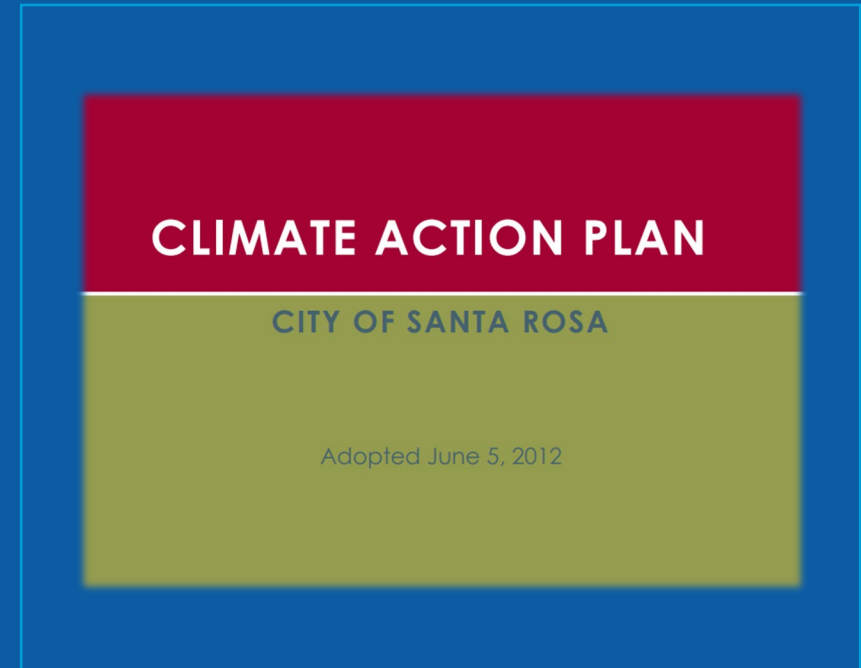
- Understand City-wide vehicle electrification
- Micro-grid
 - Solar
 - Battery Storage
 - Generator

Final Phases

- BEBs and chargers to complete 100%

Our direction

- City Climate Action Plan from 2012
 - Municipal Climate Action Plan
 - Replace diesel powered buses with GHG reducing vehicles
 - Use low-carbon fuel
- FTA Sustainable Transit for a Healthy Planet Challenge
 - City participating along with 171 other transit agencies
 - City's Climate Action Plan shows plan to reduce GHG emissions
 - Next steps
 - Healthy Planet Challenge will require transit agency to develop measurable greenhouse gas (GHG) emission targets
 - Sign on by March 2023



Our direction: State Requirement

- California Air Resources Board (CARB) passed Innovative Clean Transit (ICT) Rule in 2018
 - Requires conversion to zero-emission fleet
- ICT timeline for small agencies:
 - 2023: Submit Council approved Zero-Emission Bus (ZEB) Rollout Plan
 - 2026: Each bus purchase must contain 25% or more ZEB
 - Potentially including paratransit (dependent on bus manufacture testing approvals)
 - 2029: Each bus purchase is 100% ZEB
 - 2040: Full ZEB Fleet



Planning

- Partnership with Sonoma Clean Power (SCP) and regional operators
- Study focused on short term deployment
 - Transit yard vs. Transit Mall charging
 - Charging Equipment and management solutions
 - Types of buses
 - Resiliency
 - Solar
 - Back up generator
 - Energy Storage



Battery Electric Bus Planning and Engineering Study for Santa Rosa CityBus

SPONSORED BY SONOMA CLEAN POWER

December 31, 2019

Prepared for:

Santa Rosa CityBus
Transit Operations Building
45 Stony Point Road
Santa Rosa, CA 95401

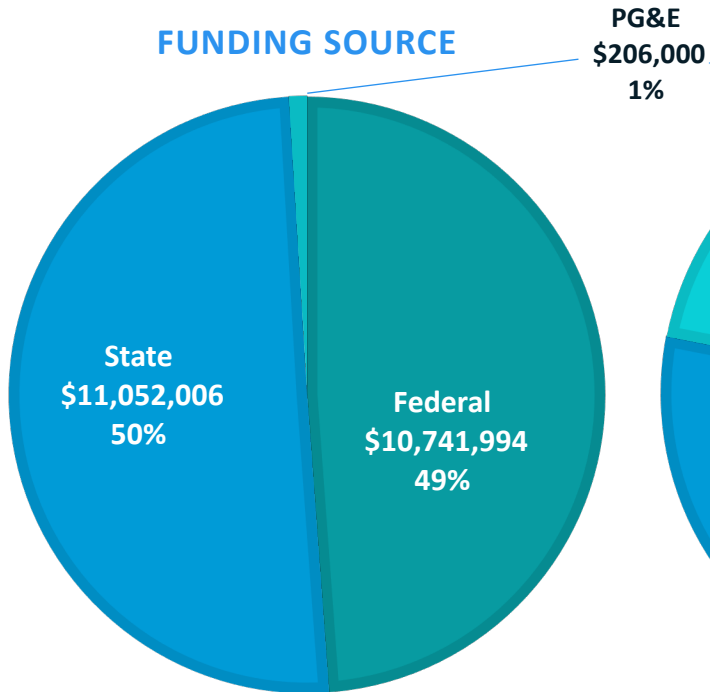
Prepared by:

The Cadmus Group

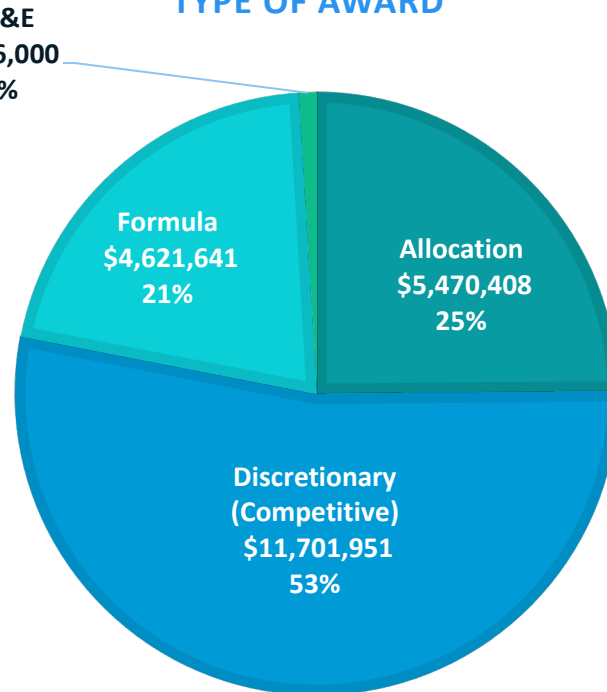
Funding: Bus Replacement

(approx. \$22M total committed)

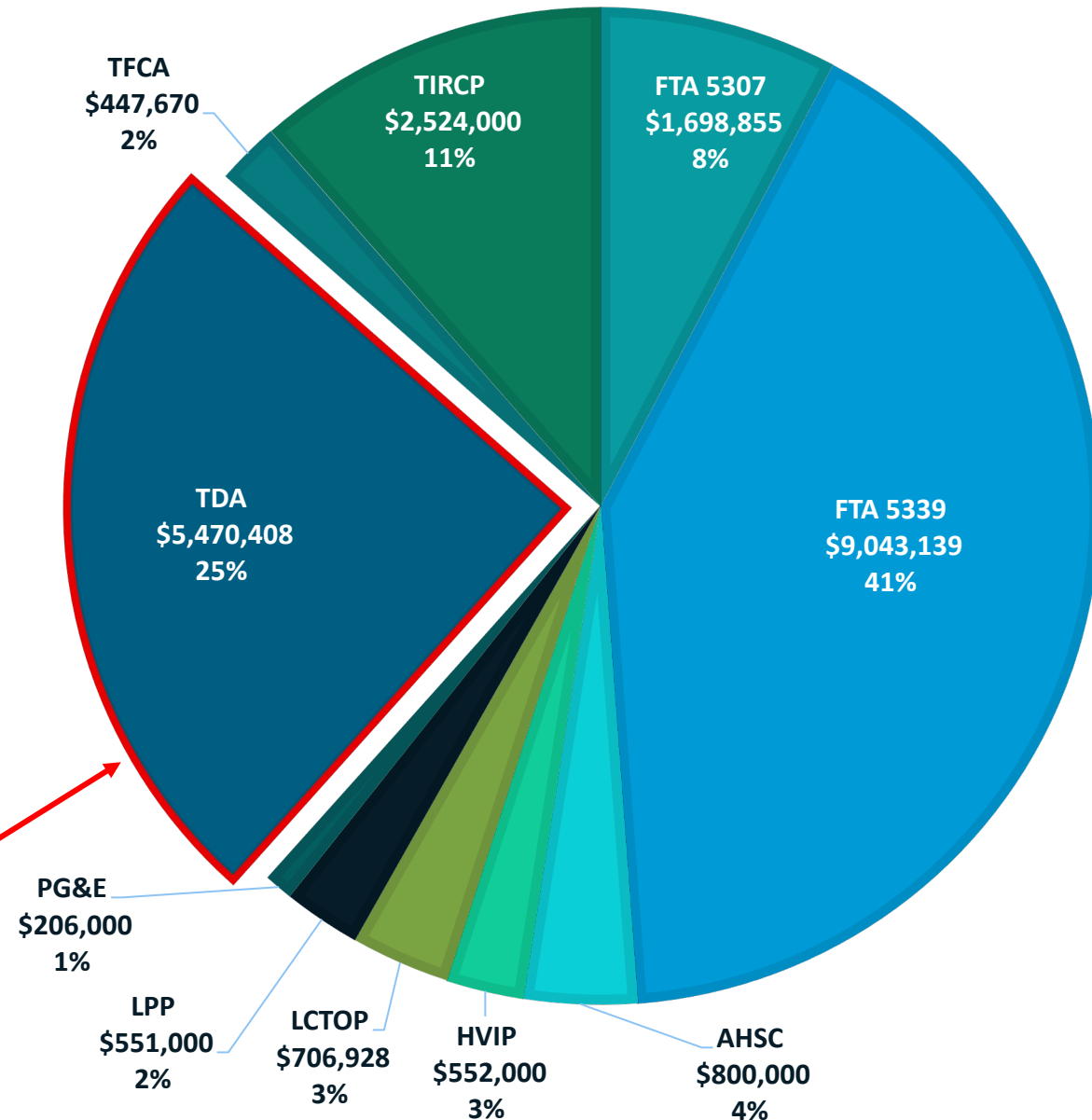
FUNDING SOURCE



TYPE OF AWARD



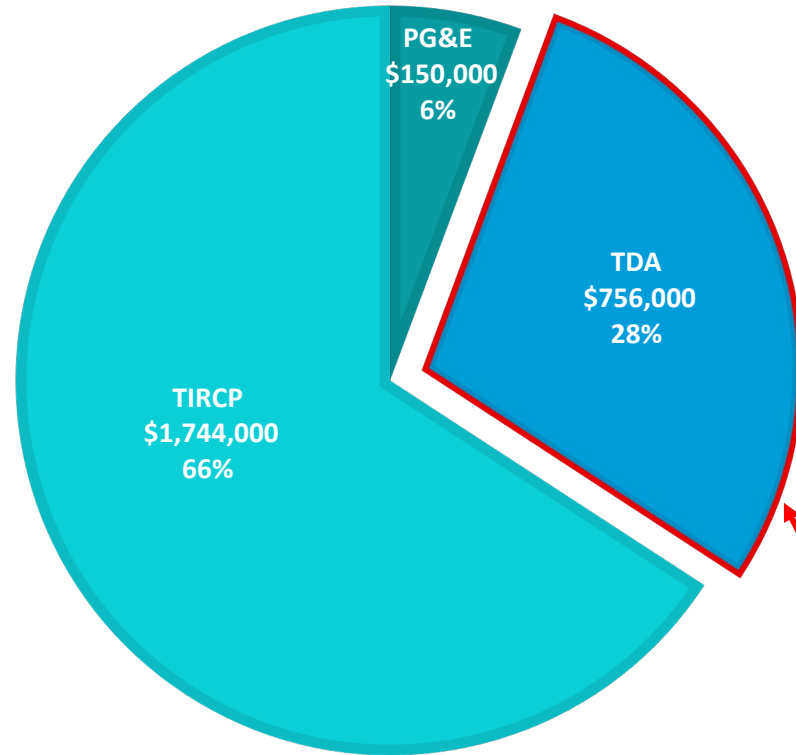
INDIVIDUAL PROGRAM AMOUNTS



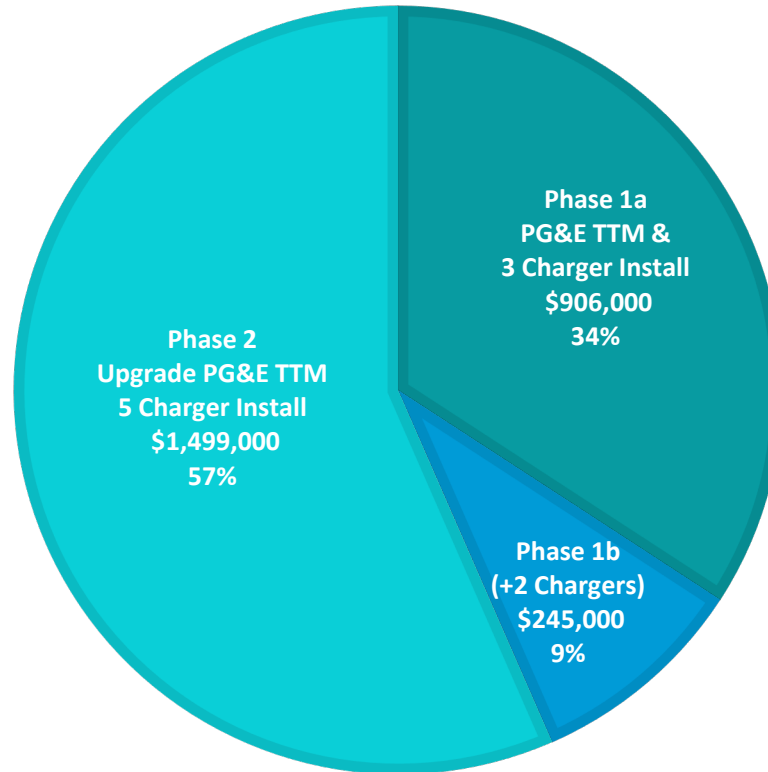
Continuing to pursue eligible funding to offset use of our matching capital reserve (HVIP, etc.)

Funding: Infrastructure (approx. \$2.6M total committed)

PROGRAM AMOUNTS



PROJECT PHASE AMOUNTS



Continuing to pursue eligible funding to offset use of our matching capital reserve (EnerGIZE, etc.)

We are starting to build.

- The Power: City Evergreen
- The Chargers:
 - PG&E EV Fleet
 - Behind the meter
 - To the meter
- The Buses
 - Oakmont/Paratransit
 - Fixed Route
 - The new BEB





The Power : 100% Local Renewable

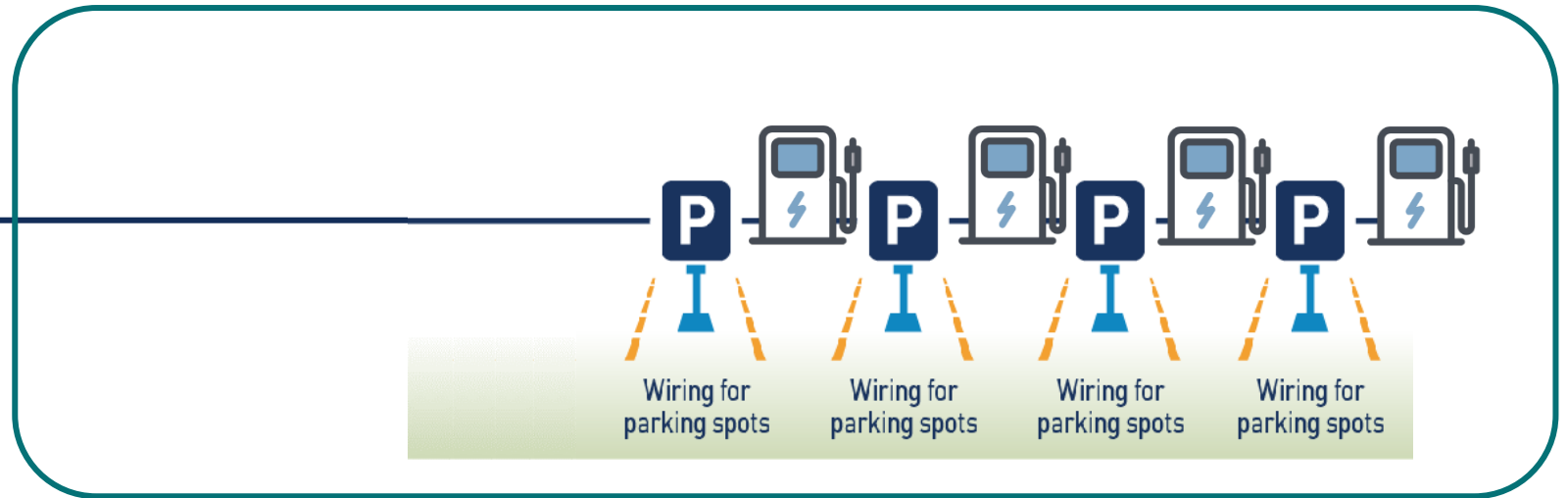
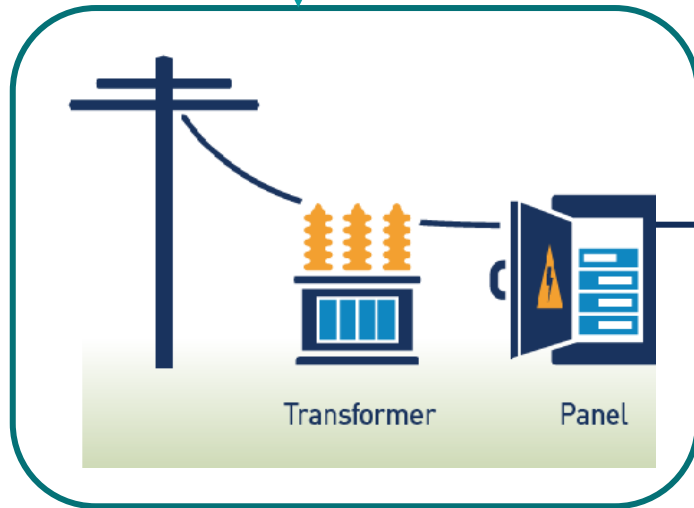
- The Source – The EverGreen program
 - City of Santa Rosa operates on EverGreen power
 - Geothermal power at the Geyser Fields and solar
 - An energy portfolio provided by Sonoma Clean Power (SCP)
 - Sonoma County is uniquely positioned to more significantly reduce our transportation related emissions
 - BEB's have zero tail pipe emissions. Emissions depend solely on how electricity is produced

Starting to Build: Charging Infrastructure

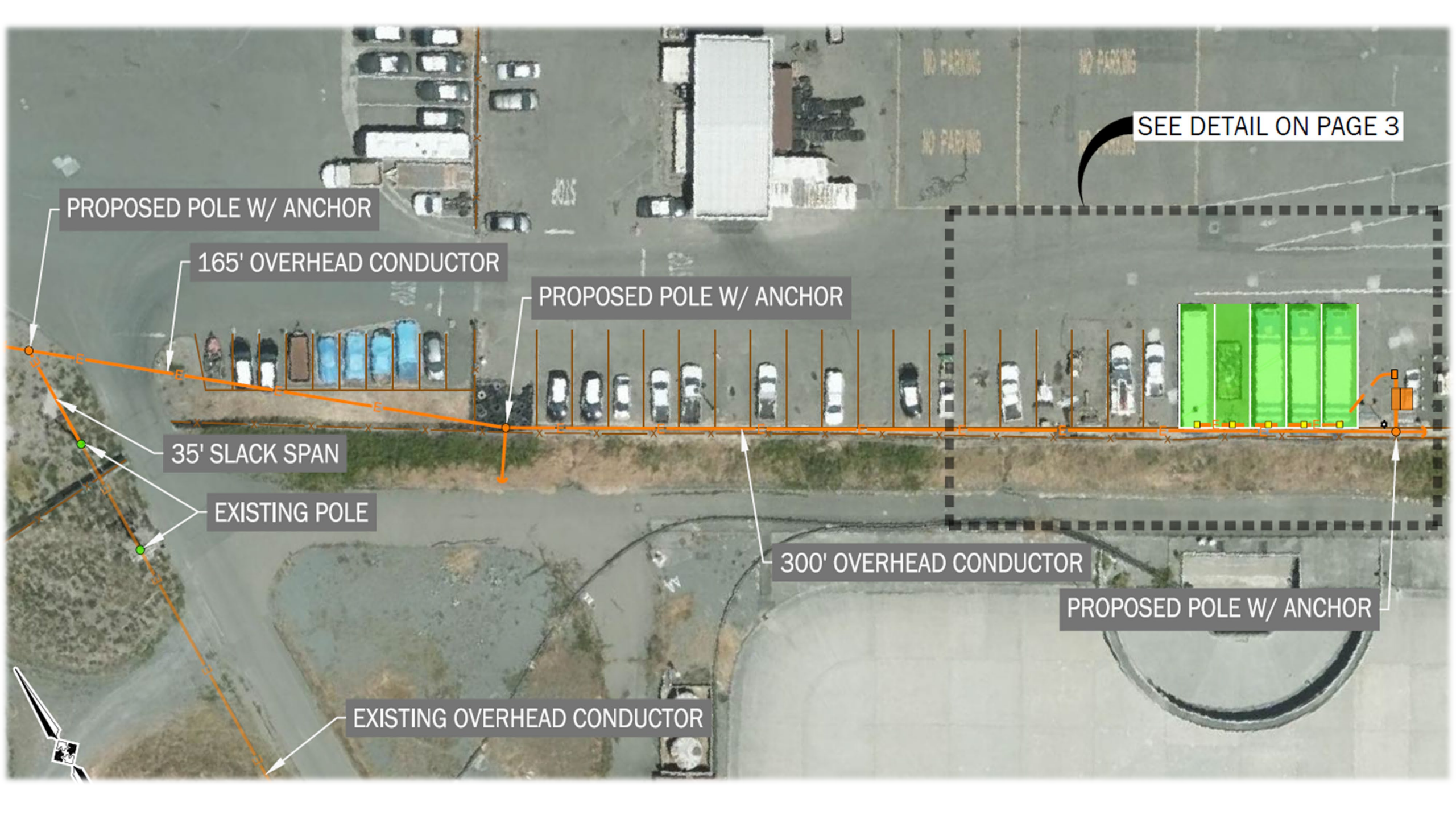


- April 2019 - Council Study Session and Approval for PG&E EV Fleet Program
 - Covers the \$140,000 infrastructure cost “to the meter”
 - Plus “behind the meter” incentive rebates to City of up to \$206,000
 - City commits to:
 - Purchase 9 BEBs and 5 dual-port chargers by 2024
 - Operate this infrastructure for a minimum of ten years
- May 2020 - Council approved EV Fleet Contract with PG&E
- January 2021 - Council Authorized Design-Build Procurement
- April 2021 – Council approved contract with Cupertino Electric

PG&E pays for, constructs, owns, and maintains all infrastructure “to the meter”



City pays for, constructs, owns, and maintains infrastructure “behind the meter”



SEE DETAIL ON PAGE 3

PROPOSED POLE W/ ANCHOR

165' OVERHEAD CONDUCTOR

PROPOSED POLE W/ ANCHOR

35' SLACK SPAN

EXISTING POLE

300' OVERHEAD CONDUCTOR

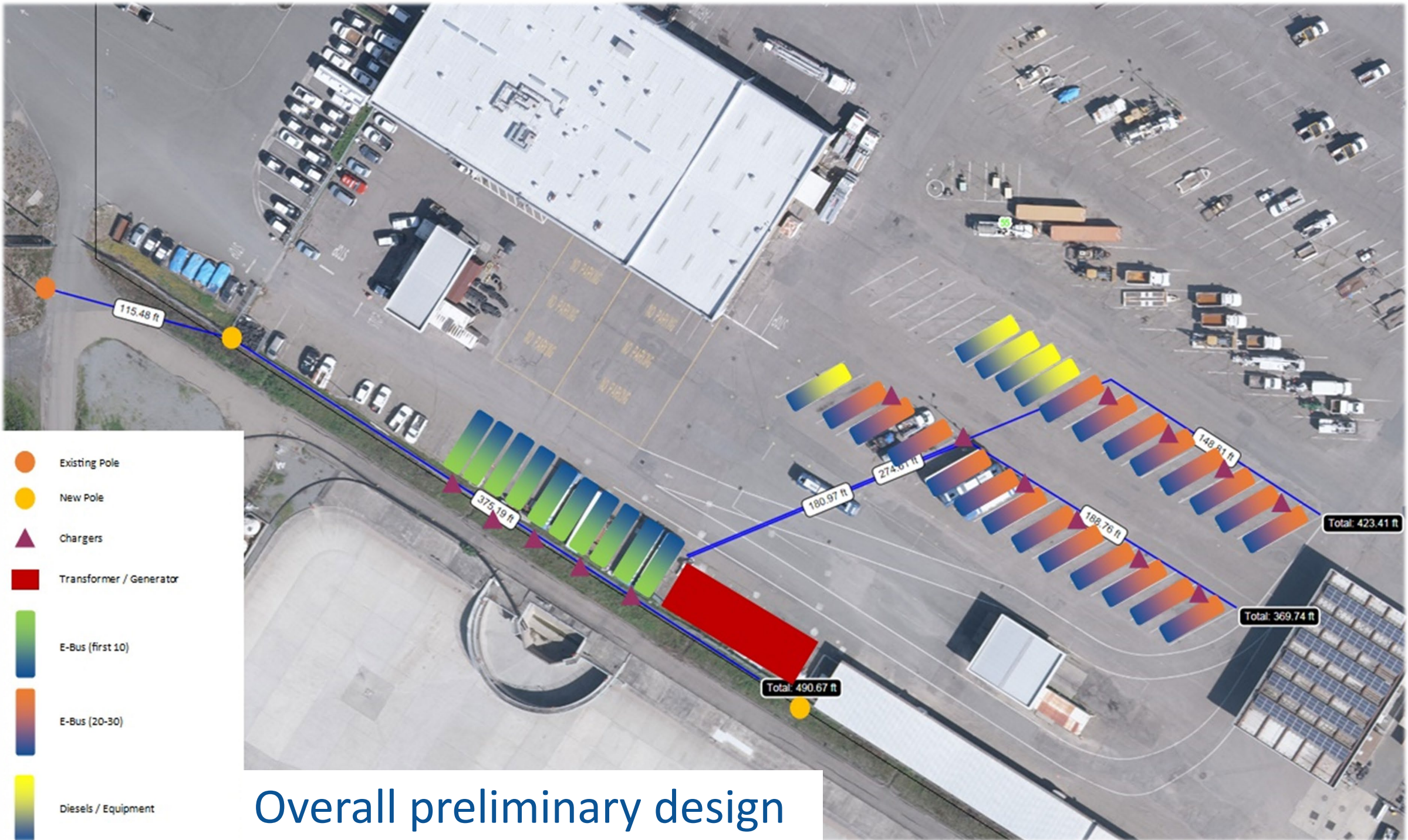
PROPOSED POLE W/ ANCHOR

EXISTING OVERHEAD CONDUCTOR









- Existing Pole
- New Pole
- ▲ Chargers
- Transformer / Generator
- E-Bus (first 10)
- E-Bus (20-30)
- Diesels / Equipment

Overall preliminary design

Santa Rosa
Paratransit

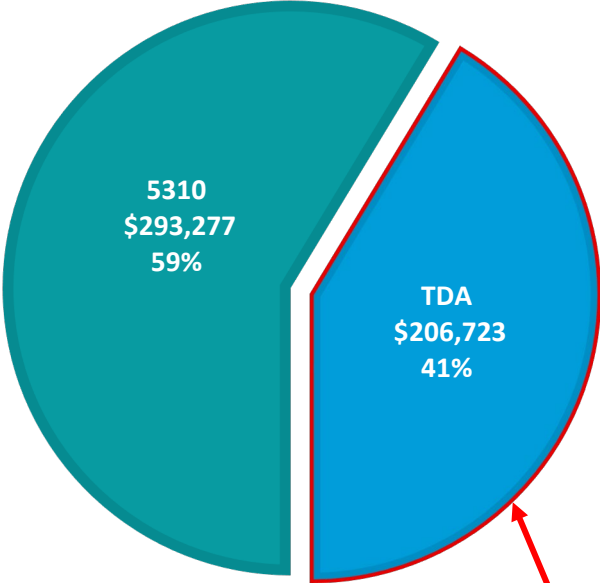


Santa Rosa CityBus
Dakmont

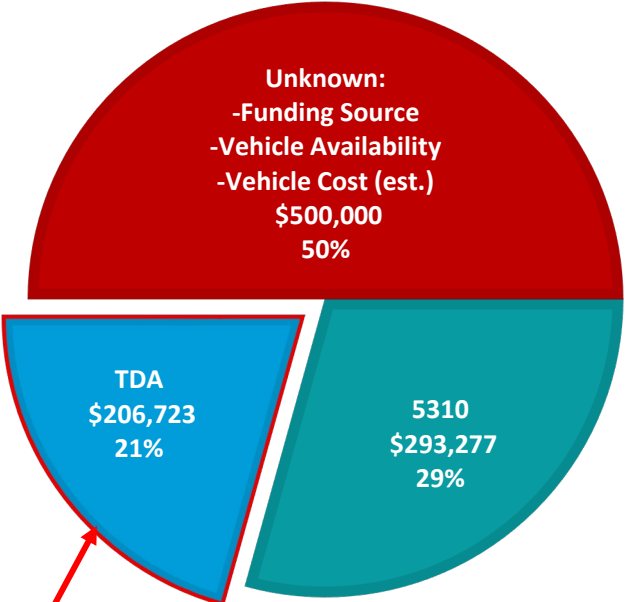


Current Cutaway Fleet

PROJECT FUNDING AMOUNT
(ASSUMING GAS VEHICLE)



PROJECT FUNDING AMOUNT
(ASSUMING ELECTRIC)



Use of capital reserve

Funded for gas vehicle replacements

*Pending award

2010	2014 *
2014 *	2014 *

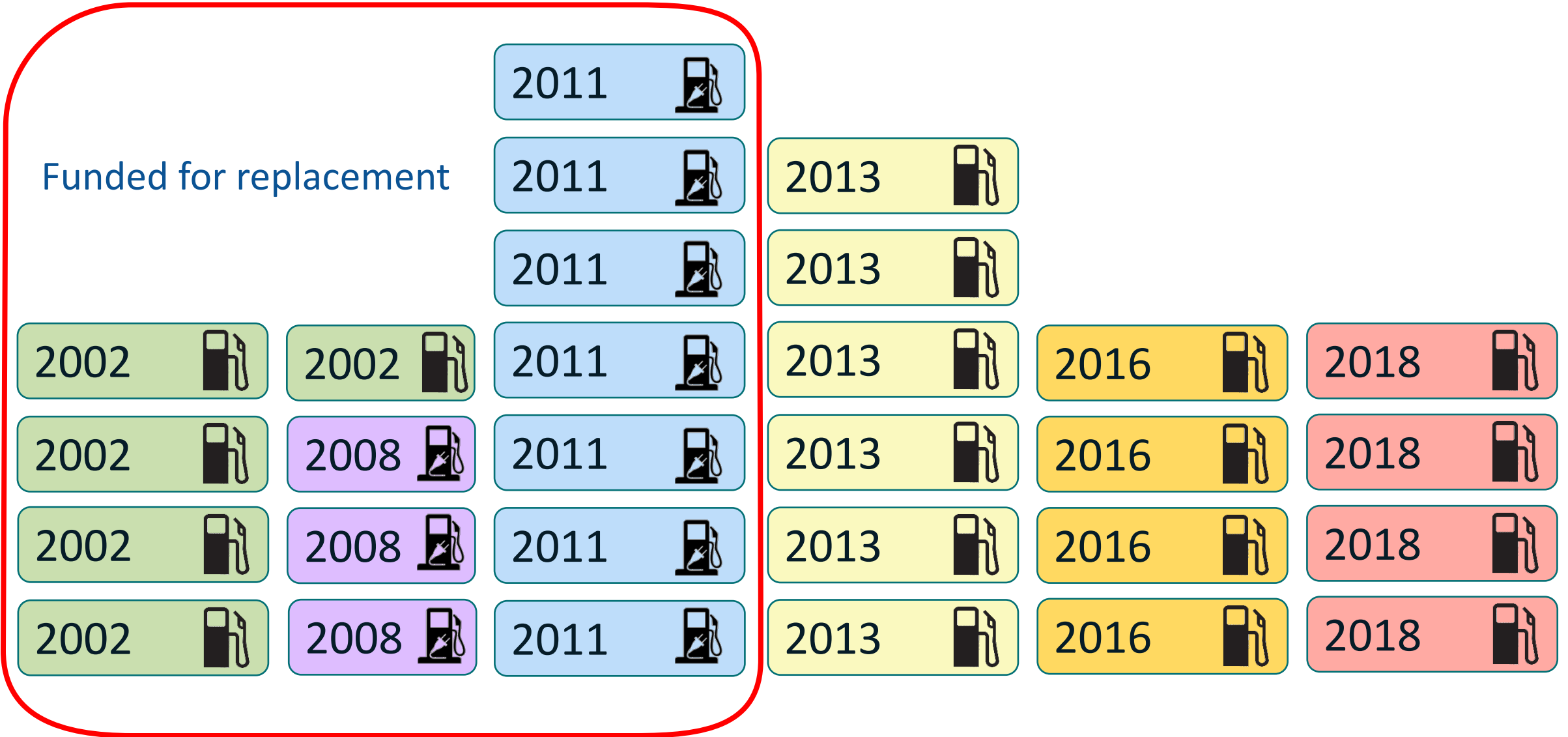
2014	2020
2014	2020
2014	2020
2015	2020

The Buses

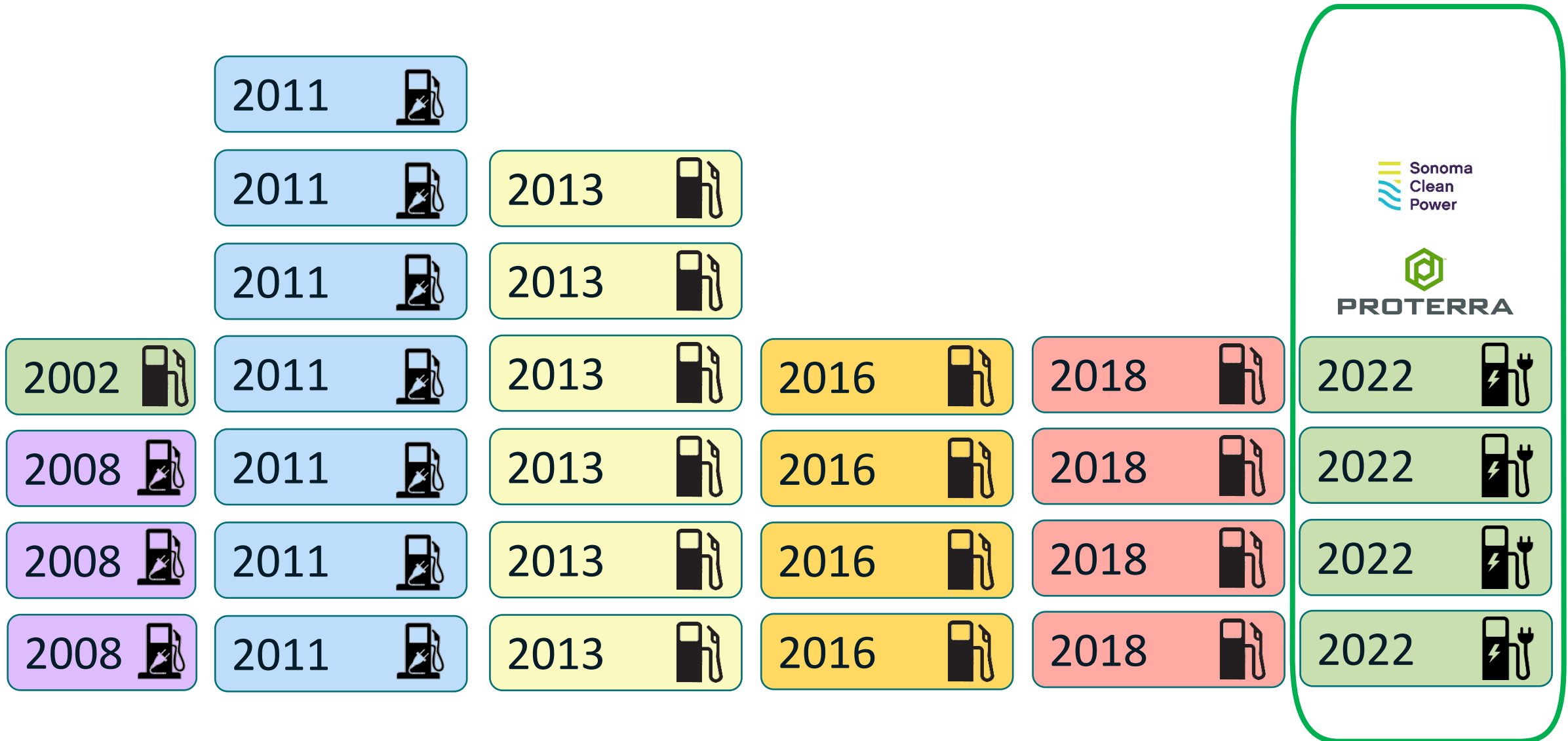
Santa Rosa **CityBus**



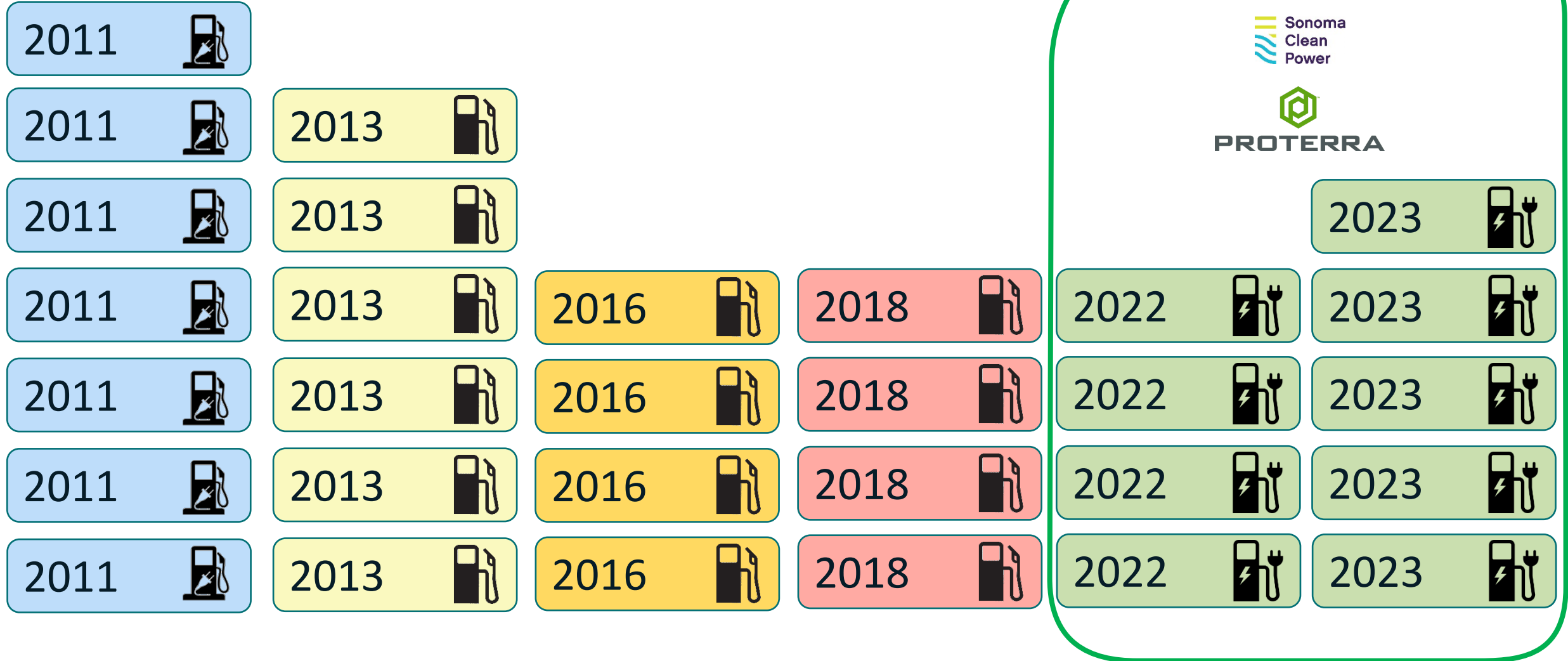
Current Fixed Route Fleet



Fixed Route Fleet in Jan 2023




Fixed Route Fleet in Jan 2024




 Sonoma
Clean
Power


PROTERRA


Fixed Route Fleet Projected 2026


2013 


2013 

2013 

2013 

2013 

2013 

2016 

2016 

2016 


2016 


2018 


2018 


2018 


2018 

2022 


2022 


2022 


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2026 


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2026 

2026 

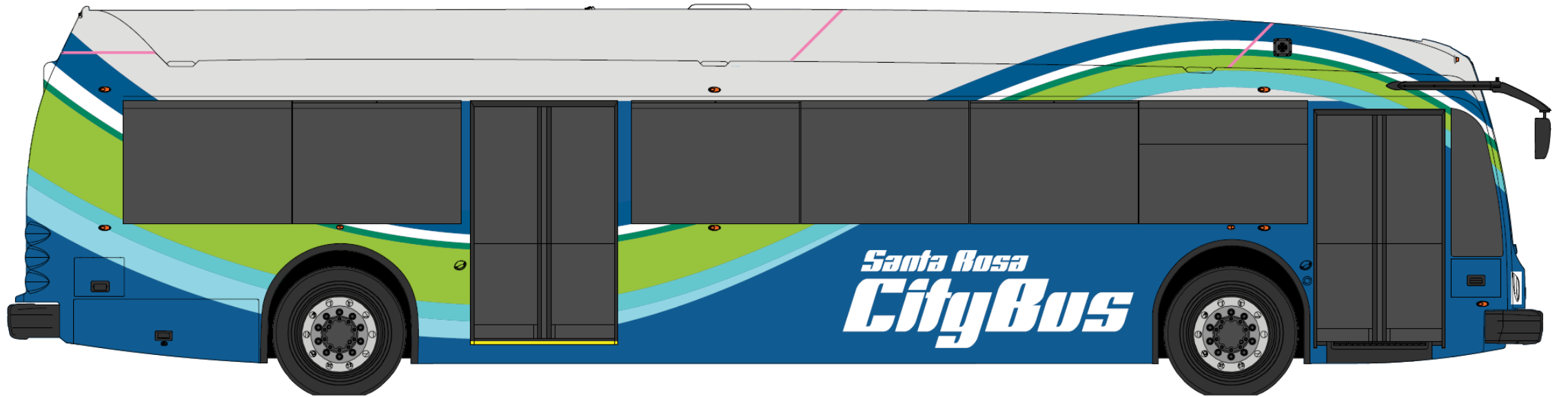
2026 



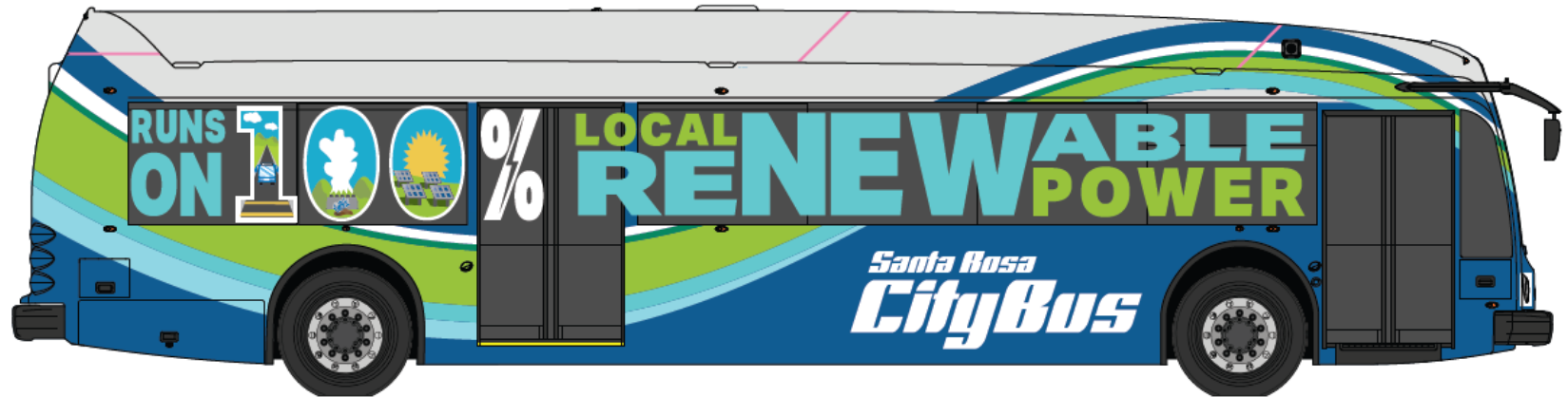
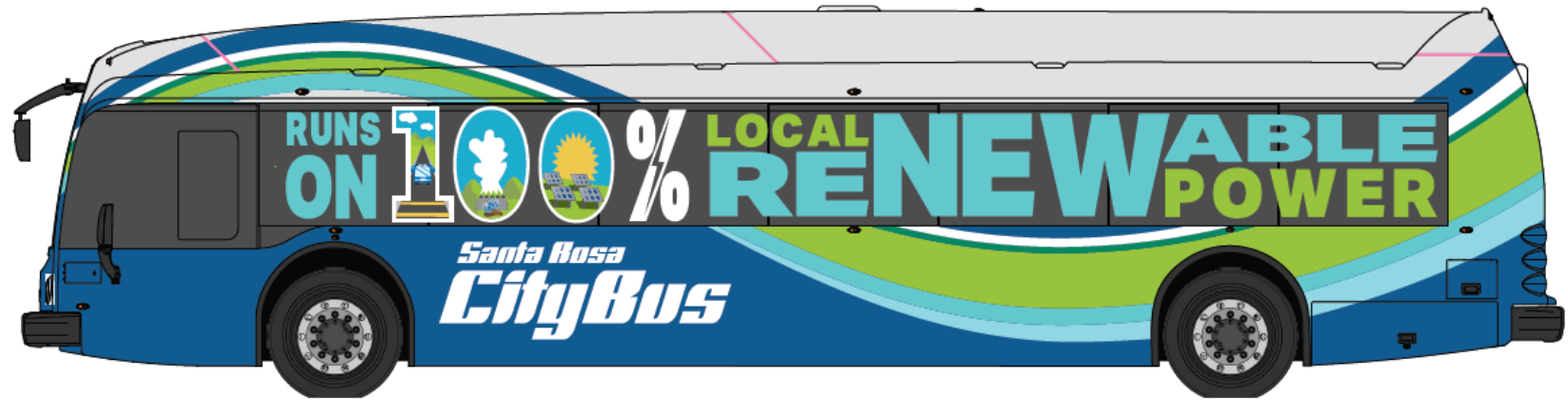
A large rounded rectangular area containing a grid of vehicle icons and logos. The grid shows a transition from gas-powered vehicles (represented by gas pump icons) to electric vehicles (represented by gas pump icons with a lightning bolt). The years 2022, 2023, and 2026 are used to denote the timeline of these changes. Logos for Sonoma Clean Power and PROTERRA are also present, with a question mark next to the PROTERRA logo in the top right corner.



The New BEB



The New Look



Next Steps

- August 23: Council consideration of 5 bus purchase
- Late 2022/Early 2023
 - Phase 1 Charger Infrastructure (install 2 additional chargers)
 - Oakmont & Paratransit vehicle purchase (gas vs. electric?)
- Early 2023: CARB ICT Zero Emission Bus Rollout Plan
- March 2023: FTA Sustainable Transit for a Healthy Planet Challenge – Phase 2
 - Would require CityBus to set GHG targets
- 2024-2025
 - Purchase funded bus replacements (#10-15)
 - Design/Construct funded phase 2 bus charging infrastructure
- Ongoing / future
 - Resiliency planning: overall City-wide electrification needs
 - Regional transit collaboration: en-route charging at Transit Mall, etc.
 - Future technologies
 - Telematics (real-time bus energy management)
 - Charger management software (depot charging enhanced management)

Next Steps --- QUESTIONS??

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