

Contra Costa County Zero Emission Vehicle (ZEV) Transition Plan

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November 10, 2025



ZEV Transition: Why Now?

Policy

- California's **Advanced Clean Fleets** Regulation requires ZEV medium- and heavy-duty fleet vehicles by 2045
- County **Vehicle Replacement Policy** requires ZEVs when vehicles age out
- County **Climate Action and Adaptation Plan** goal for County fleet ZEV transition by 2035

Stakeholders

- **45% of surveyed County employees will purchase an EV** within the next 10 years
- 54% of County employees at energy workshops are "excited" about the County's ZEV transition
- **County EV registrations have doubled** since 2021

Economics

- **Many EVs present a net savings** compared to gasoline vehicles due to low EV fuel and maintenance costs
- **Nearly \$1B in grants and incentives** for EVs and EV chargers are available in California

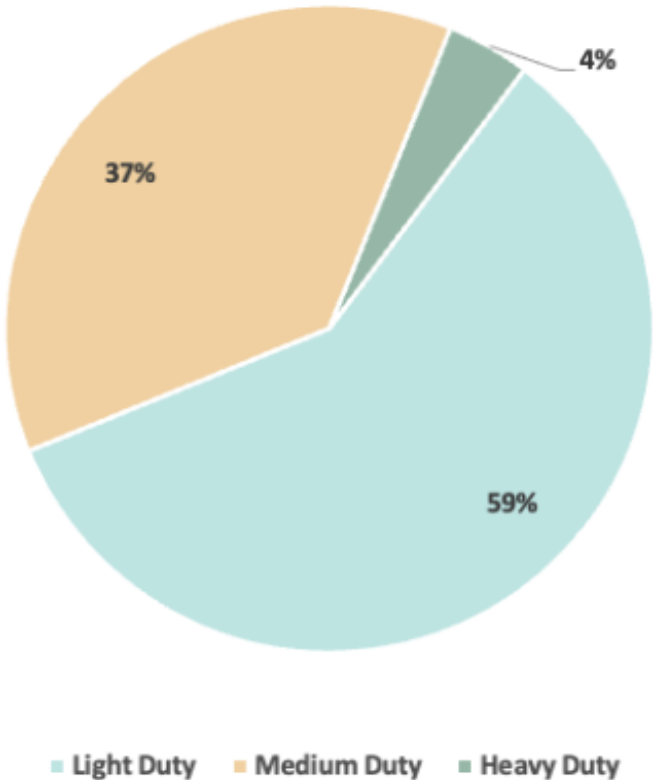
Public Health

- A full County ZEV transition will save 43,000 metric tons of carbon dioxide equivalent (CO₂e) and 750 pounds of particulate matter
- **Reduced air pollution within the County's Impacted Communities**

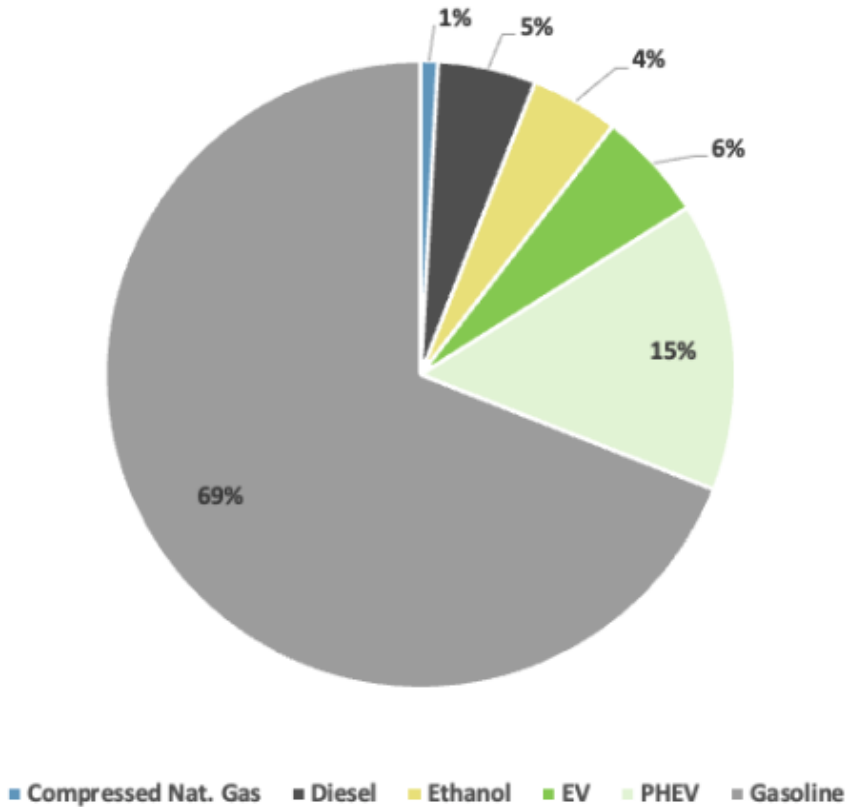


Current County Vehicles by Fuel Type and Weight Class

Breakdown of County Vehicles by Weight Class



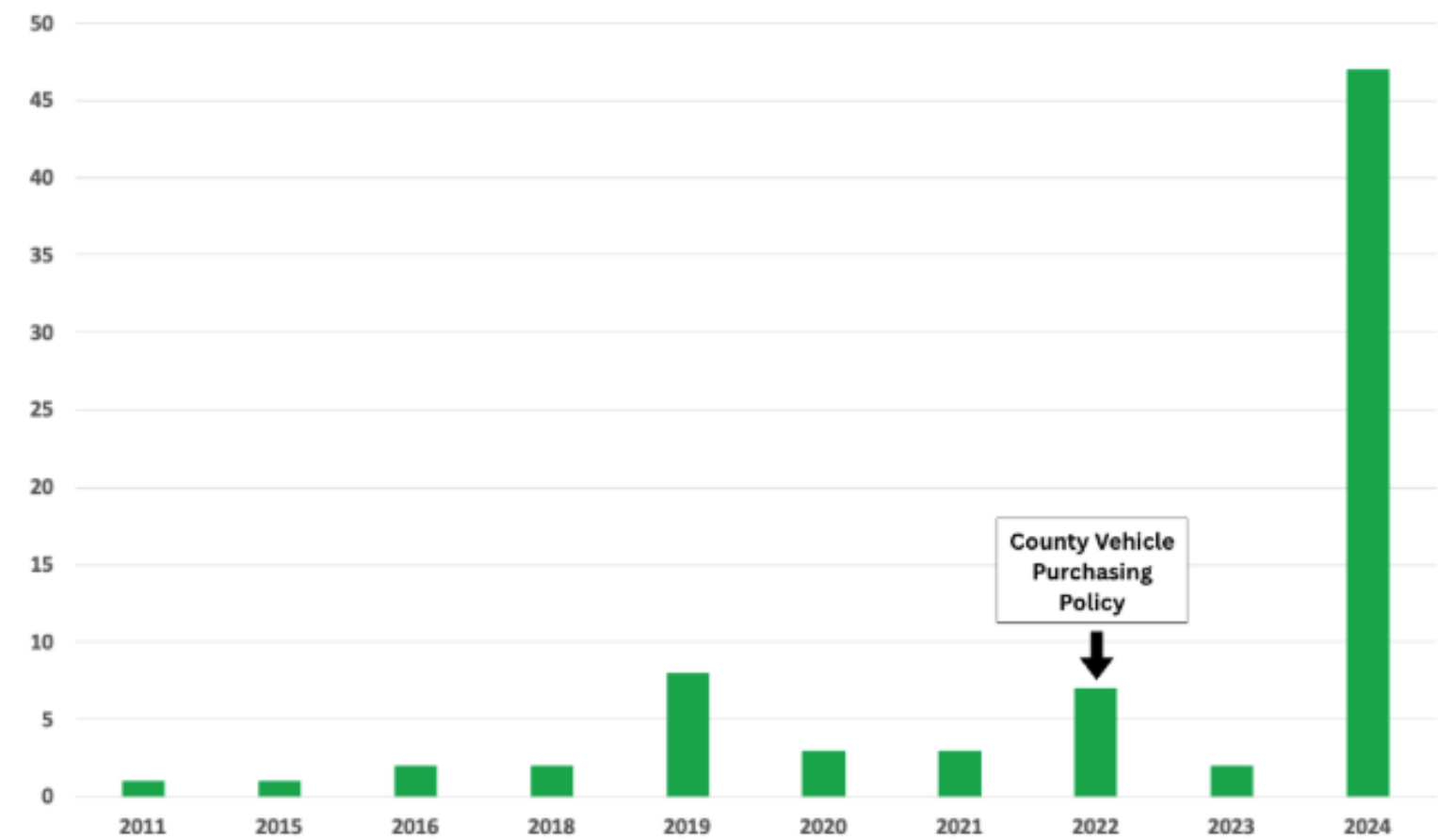
Breakdown of County Vehicles by Fuel Type



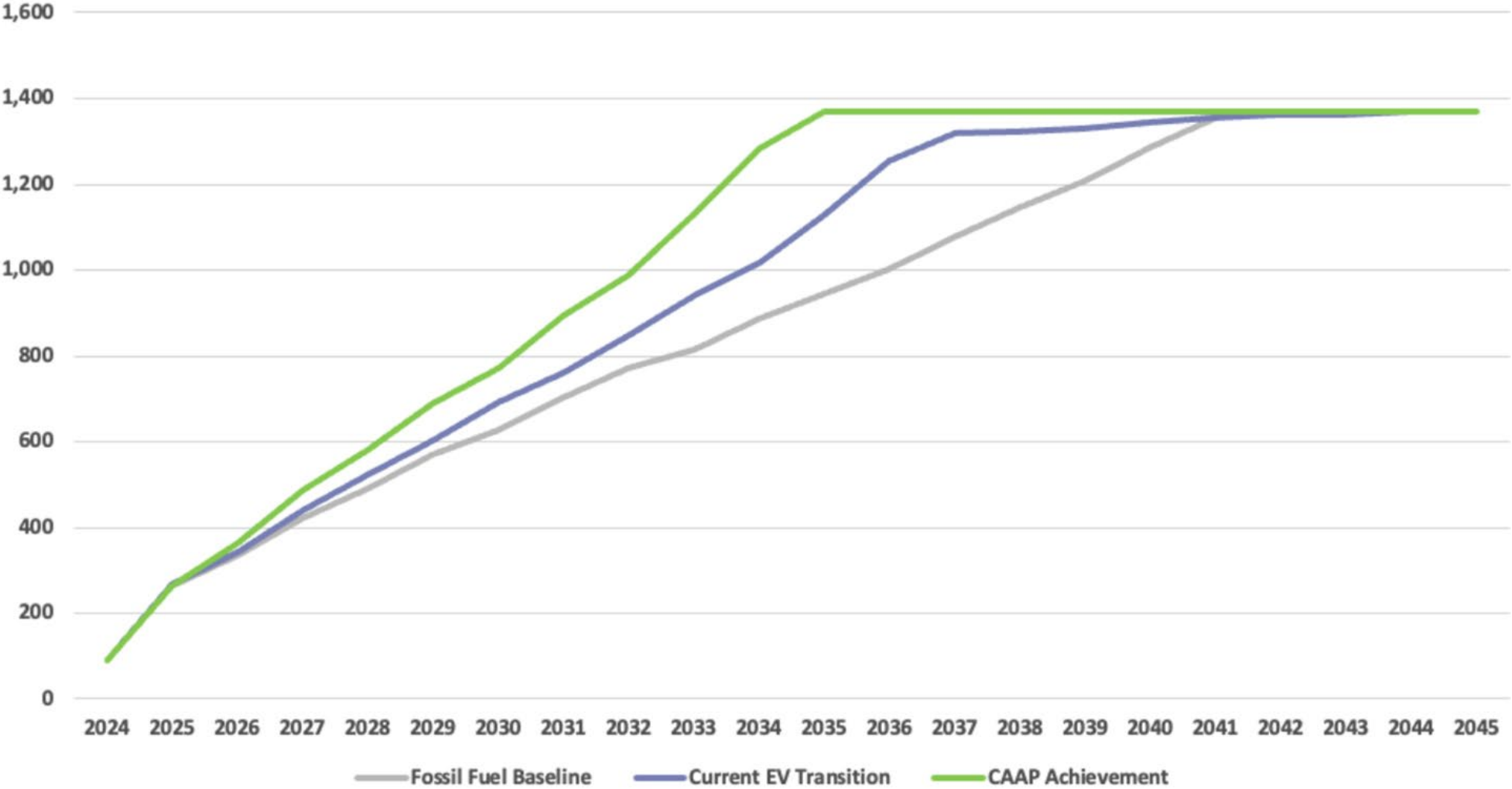
Total Fleet Vehicles: 1,368

County Vehicle Purchasing Policy Drives EV Investments

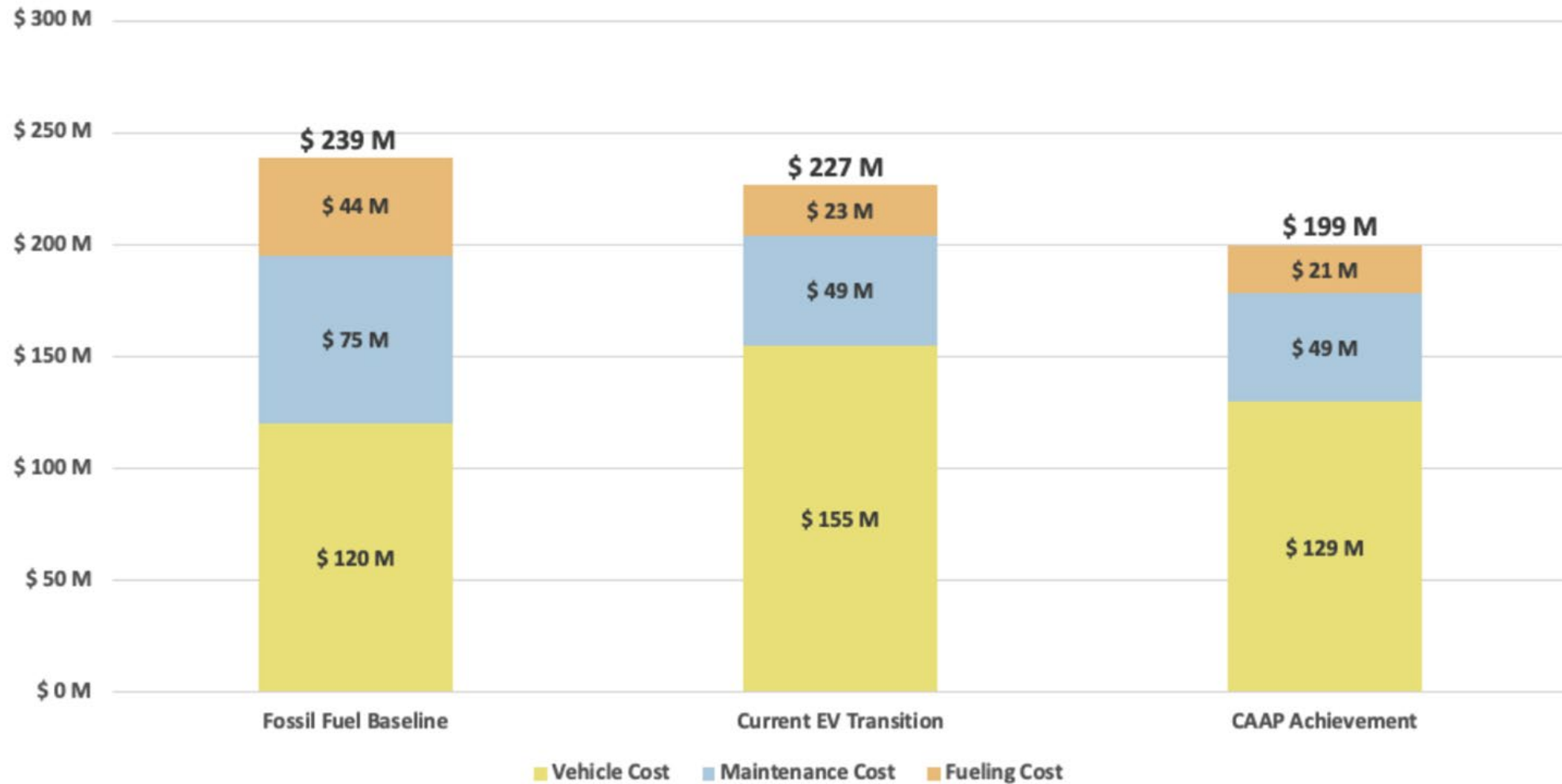
Figure 1: Historical County EV Purchases Through 2024



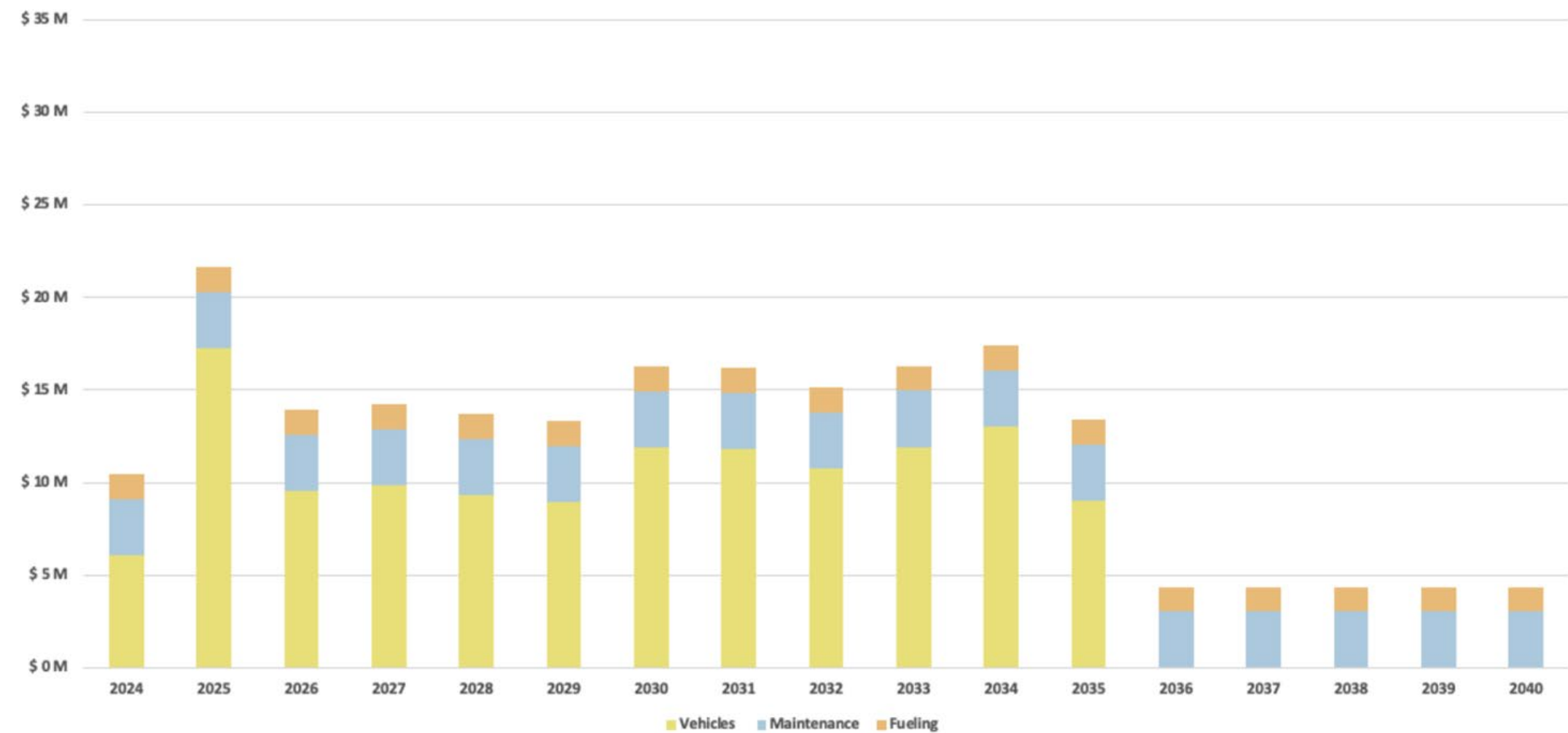
County Fleet Vehicle Replacement Curves



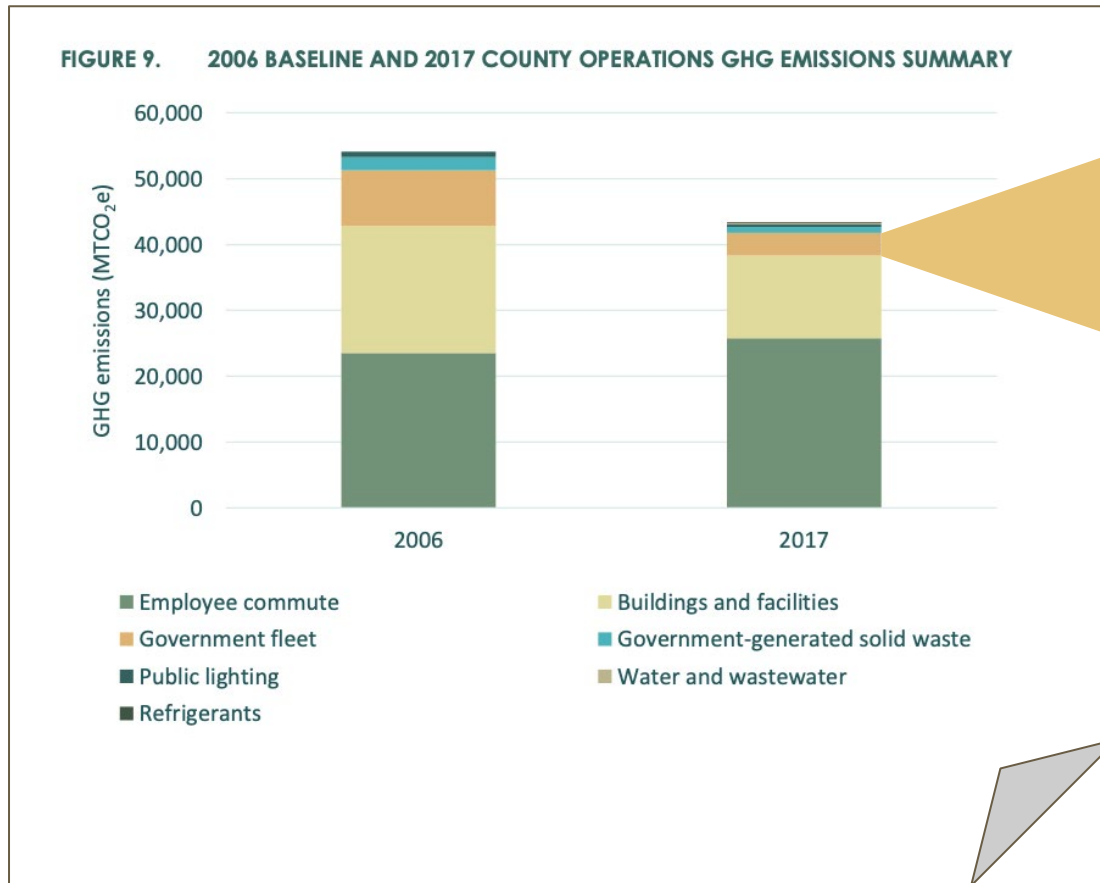
20-Year Total Cost of Ownership of ZEVs vs. Fossil Fuel Vehicle



CAAP Goal Achievement: \$10M+/Year to Unlock Savings After



Transportation Electrification Achieves Our Climate Goals



An all-electric government fleet by 2035

- Reduces 2,880 metric tons of carbon equivalent (MTCO₂e) annually
- Removes 750 pounds (lbs) of harmful particulate matter (PM 2.5) over 15 years, reducing asthma risk to Impacted Communities
- Achieves Goal TR-2 from the County Climate Action and Adaptation Plan (2024)

Strategically Selecting County Vehicles to Transition

Transitioning Sooner

- Predictable Duty Cycle
- Driven Often
- Likely to Stay Within County
- No Vehicle Add-ons
- EV Replacement Model Exists



Example: Chevy Bolt, Admin Vehicle, Multiple Departments

Transitioning Later

- Unpredictable Duty Cycle
- Driven Less Often
- Likely to Drive Outside County
- Vehicle Add-ons Required (sirens, emergency lights, heavy-duty alternators)
- EV Model Not Yet Commercially Available



Example: Ford F-550 Super Duty (EV in prototype mode), Public Works

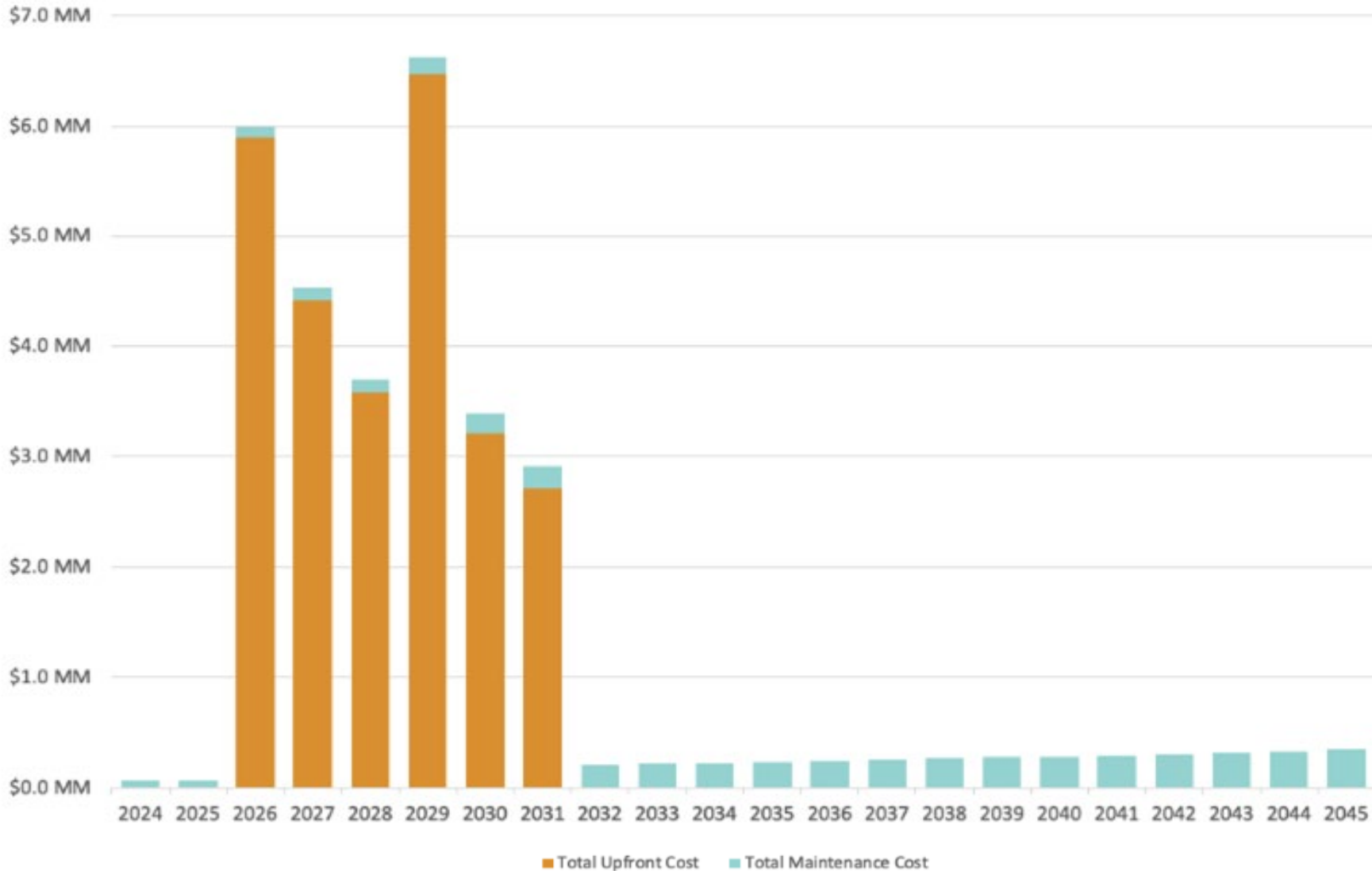
EV Chargers Needed at County Sites

Preliminary Infrastructure Estimates:

Term	EV Chargers Needed	Up-Front Cost	Key Sites
Immediate (1-2 Years)	• 121 Level 2 • 40 DCFC	\$10.3M	• 1980 Muir Rd., Martinez • 2380 Bisso Ln., Concord • 900 Ward St., Martinez
Short (3-4 Years)	• 44 Level 2 • 49 DCFC	\$10.0M	• 2467 Waterbird Way, Martinez • 5555 Giant Hwy., Richmond • 1850 Muir Rd., Martinez
Medium (5+ Years)	• 101 Level 2 • 11 DCFC	\$5.9M	• 4800 Imhoff Pl., Martinez • 300 Ellinwood Way, Pleasant Hill • 4545 Delta Fair Blvd., Antioch
TOTAL	• 266 Level 2 • 100 DCFC	\$26.5M	



EV Charger Investments-2026 to Support ZEV Fleet



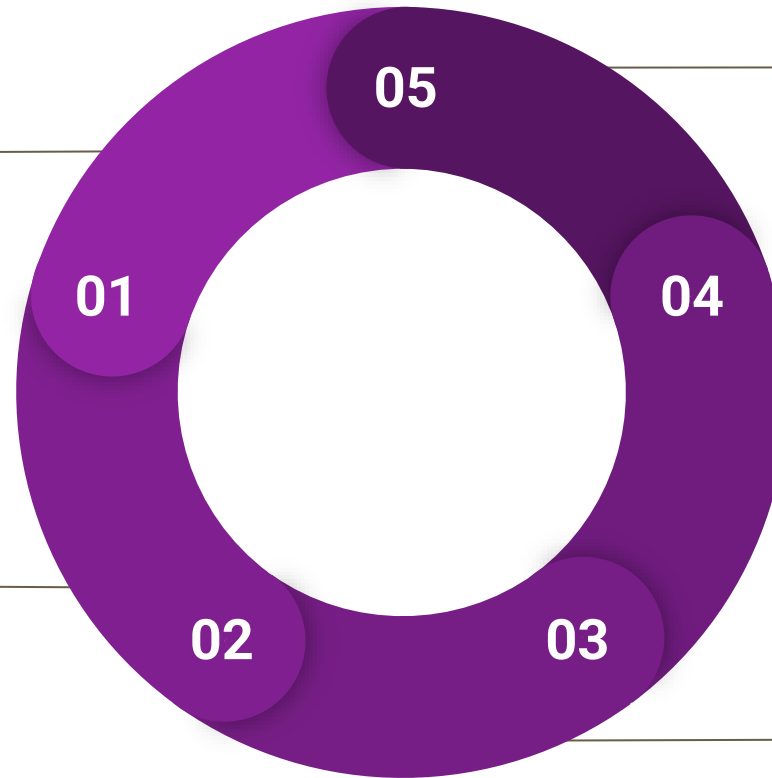
County Actions to Support ZEV Transition

County Policies

- Enable **Fleet drivers to charge County EVs at home**, reimbursable at the IRS variable mileage rate
- **Empower Fleet Liaisons** to determine levels of access to EV chargers at their Departmental sites

Workforce Development & Training

- Partner with unions, educational institutions, utilities, and the Contra Costa County Workforce Development Board (WDBCCC) to **train County auto technicians in EV maintenance**
- Leverage the **County Fleet Yard as a workforce training site**
- Launch an **EV Transition Toolkit** for County Fleet drivers



Funding & Financing

- **Pursue grant funding** from new sources such as the Bay Area Air Quality Management District and the CA VW Mitigation Trust
- **Pilot innovative financing** such as vehicle leasing, low-interest loans, utility on-bill financing and green bond financing

Regional Collaboration

- PG&E TE Advisory and C-TEC
- Leverage existing JPA (CCTA) or explore new EVSE-dedicated JPA for county-wide transportation electrification infrastructure development & management

Innovation

- Partner with utilities to form **vehicle-to-grid (V2G) clusters of EV chargers** to enhance local resilience and bring in additional revenue

EV Transition Toolkit

Welcome to your EV!



- Range: 250 miles
- Charger location: driver's side
- Charges from 10% to 80% in 30 min with a DC Fast Charger

Find a Charger



List and map of County EV chargers

EV Charging How - To



- Charge up to 80%
- “Top off” the vehicle before long trips
- Plan your daily charging, including locations and timing

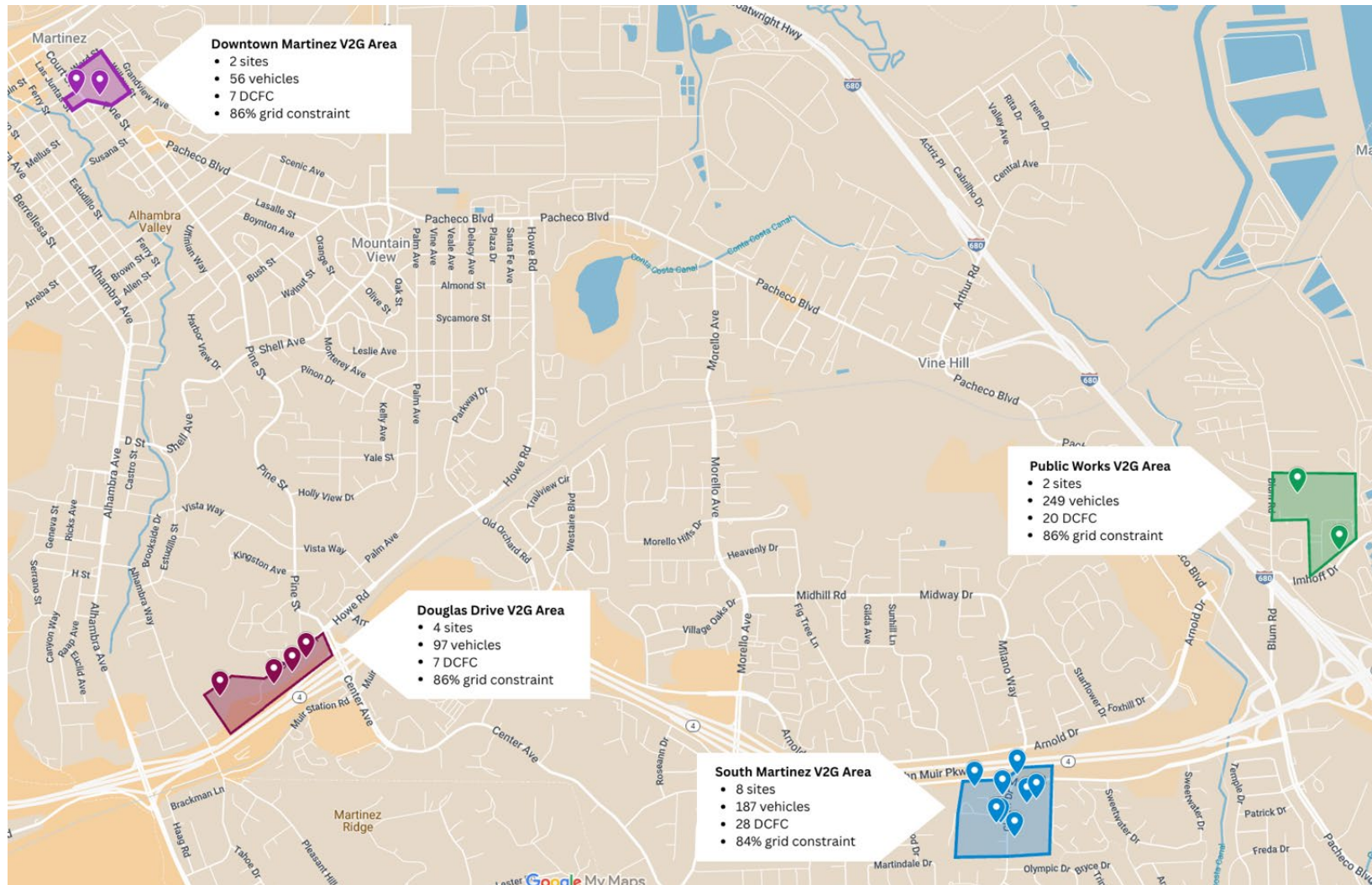
Roadside Assistance



Call Fleet Services in case of stranded vehicle or accident

Empowering people with tools and knowledge for an effective transition to a zero-emission fleet.

Leveraging VehicleGrid (V2G) Opportunities



V2G Benefits

- **Additional revenues:** providing grid services to utilities and the California Independent System Operator (CAISO)
- **Local resilience:** plugged-in vehicles can 'island' and power critical loads during outages
- **Lower operational costs:** Managed EV charging enables charging during low-cost time periods
- **Improved asset utilization:** EV batteries serve dual roles (transport + grid services), increasing the value of the battery investment

Thank You

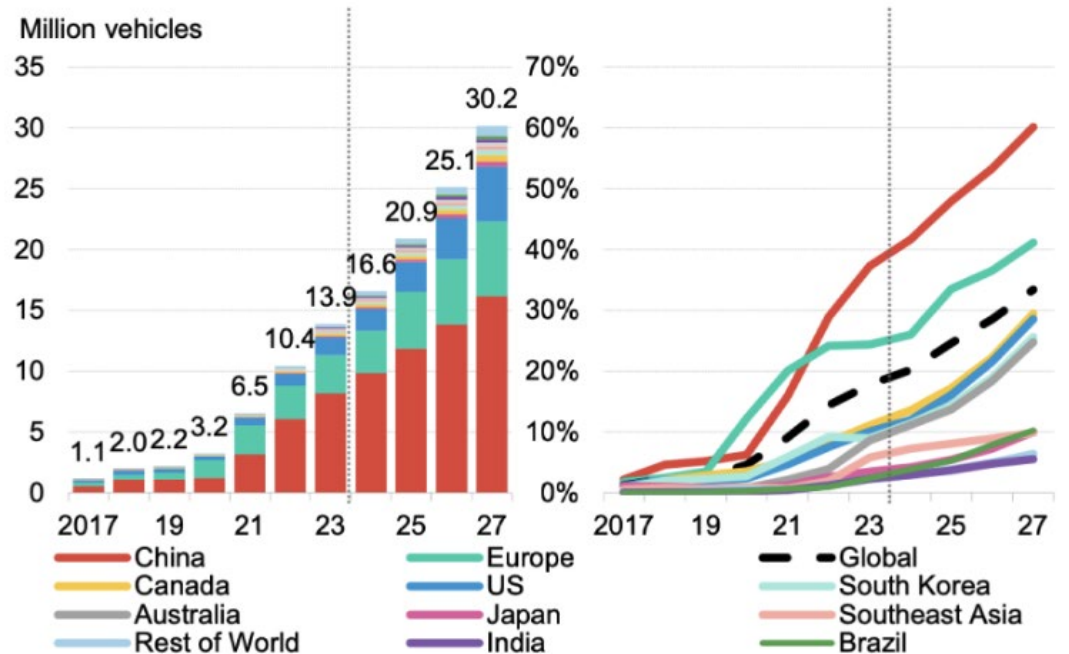
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Appendix

Market Trends for EVs

Global near-term passenger EV sales and share of new passenger vehicle sales, by market



Source: BloombergNEF. Note: Europe includes the EU, the UK and European Free Trade Association (EFTA) countries. EVs here includes battery-electric and plug-in hybrid vehicles. 2023-2026 are BNEF forecasts.

Global Market

- Rapid Growth
- Diversifying EV Vehicle Types
- China leads manufacturing and sales

U.S Market

- Slowed growth
- Grants and tax credits removed
- MD and HD growing faster than LD

California Market

- Ambitious EV goals
- EV registrations flat at 25% in 2025

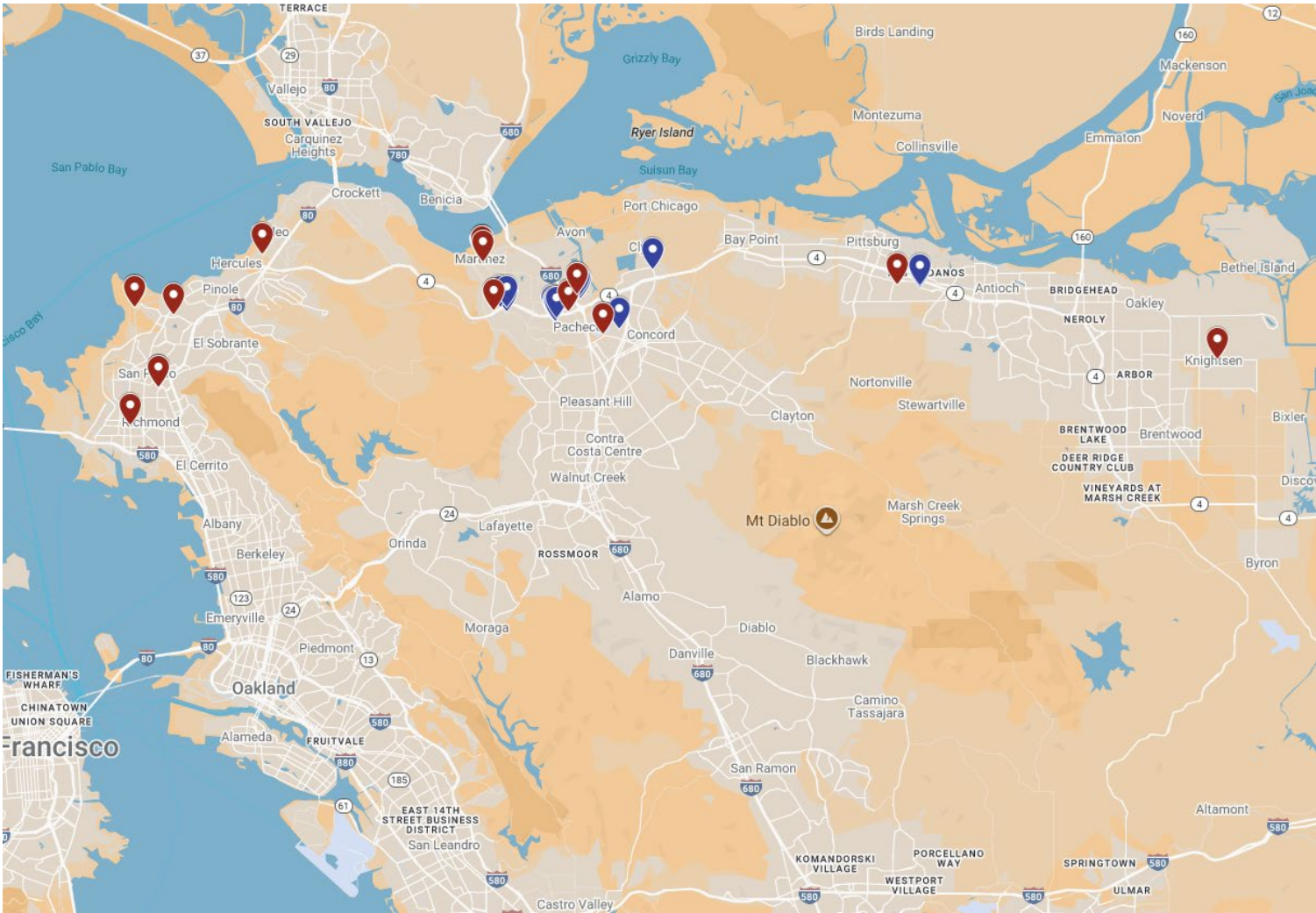
Bay Area Market

- Leads nation in EVs
- 25% of EVs statewide
- County EV registrations doubled since 2021

Workplace Charging Policy Recommendations

- ❑ Allow Fleet drivers to take home County EVs to charge at home, reimbursed by IRS variable mileage rate
- ❑ Differentiate time limits on County chargers
 - ❑ 24 hours for Level 2
 - ❑ One hour for DCFC
- ❑ Empower Fleet Liaisons to determine charger reservation hours for their Departments
 - ❑ *Example:* Personal employee EVs may only use Level 2 chargers until 4pm; after 4pm, only County Fleet vehicles may use Level 2 chargers

Current County EV Chargers



Existing and Near-Term County EV Chargers

Level 2	279
DCFC	20
TOTAL	299

Legend

-  County Level 2 Charger Sites
-  County DCFC Sites

Key Assumptions Total Cost of Ownership

Table 1: Key Assumptions in TCO Analysis - All Scenarios

EVs	
EV Purchase Price Annual Escalation Rate	4%
Starting Electricity Price	\$0.21/kWh
Electricity Price Annual Escalation Rate	4%
EV Maintenance Cost	\$0.19/mi - \$0.56/mi
EV Repair Cost	\$0.29/mi - \$2.66/mi
Gasoline Vehicles	
Gasoline Vehicle Purchase Price Annual Escalation Rate	4%
Starting Gasoline Price	\$5.00/gallon
Gasoline Price Annual Escalation Rate	4%
Gasoline Vehicle Maintenance Cost	\$0.29/mi - \$0.93/mi
Gasoline Vehicle Repair Cost	\$0.41/mi - \$2.89/mi

ACF Regulations Require Increase in ZEV Investment

Figure 2: ZEV Percentages to Comply with California's ACF Milestone Option

Percentage of vehicles that must be ZEVs	10%	25%	50%	75%	100%
Milestone Group 1: Box trucks, vans, buses with two axles, yard tractors, light-duty package delivery vehicles	2025	2028	2031	2033	2035 and beyond
Milestone Group 2: Work trucks, day cab tractors, pickup trucks, buses with three axles	2027	2030	2033	2036	2039 and beyond
Milestone Group 3: Sleeper cab tractors and specialty vehicles	2030	2033	2036	2039	2042 and beyond