



# AGENDA: 4d. 17-2665

Bay Area Regional Collaborative  
(BARC)

## Update on Regional Efforts to Deploy Electric Vehicles and Infrastructure

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- Background
- Planning and Goals for Electric Vehicle Adoption
- Air District & MTC Programs and Results
- Future Opportunities
- Next Steps

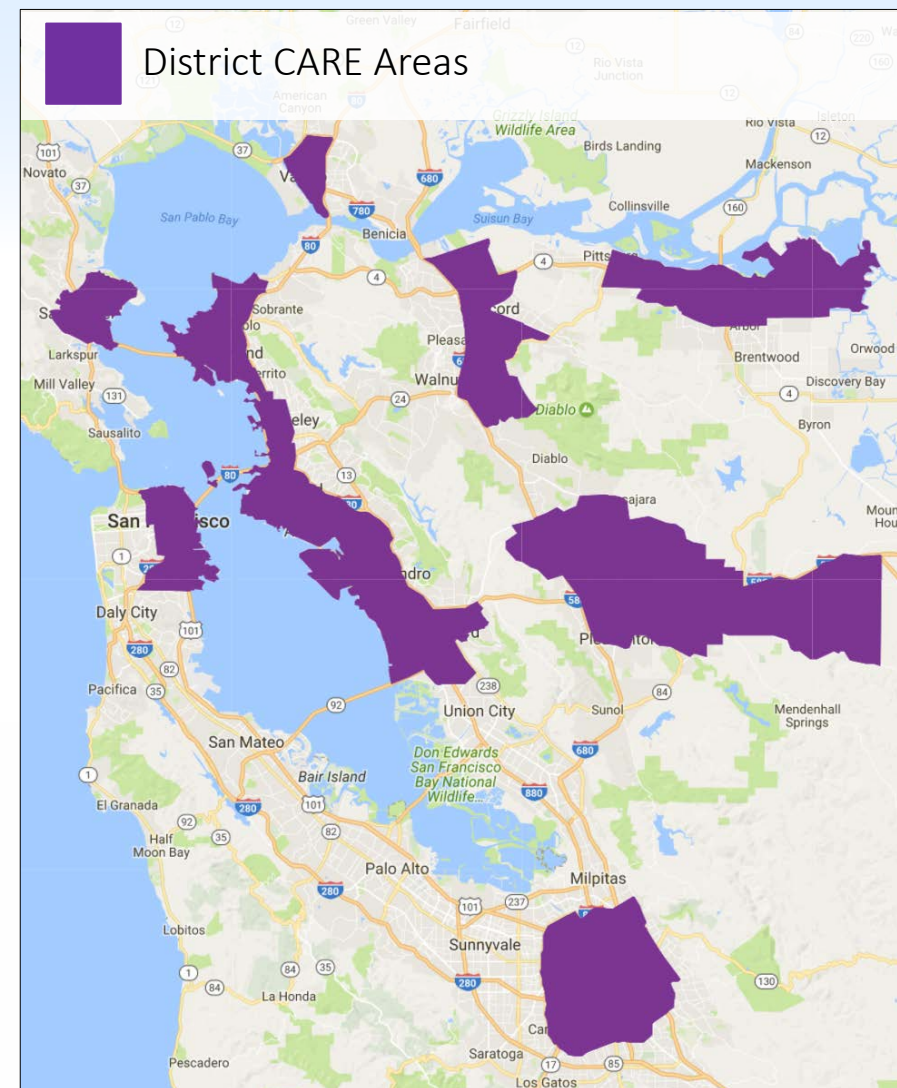






# Background

- Over 5.7 million on-road vehicles:
  - ✓ 40% of Criteria Pollutants
  - ✓ 36% of Greenhouse Gases
- 3.0 billion gallons of petroleum consumed annually by Bay Area drivers
- Diesel particulate (PM) emissions disproportionality impact communities in closest proximity to highways





# Bay Area Electric Light-Duty Vehicle Adoption Goals 2020 - 2050



Plan  
BayArea  
2040

2020:

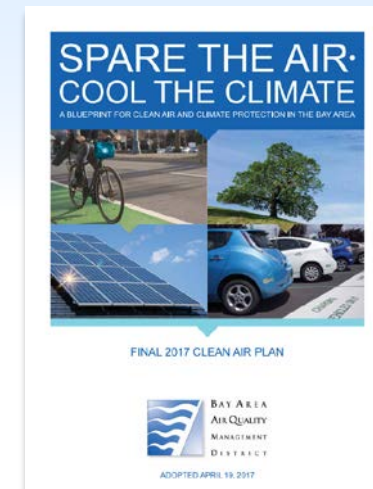
- 110,000 EVs (Bay Area)
- 1.5 M EVs (Statewide)

2025:

- 247,000 EVs (Bay Area)

2050:

- 90% of fleet (Bay Area)





# Air District Investment in Electric Vehicle Technology

## 2011-2016: \$60 Million



### Plug-in Electric Vehicles

**1,561** Cars  
**172** Heavy Duty Trucks & Buses  
**99** Shared Autonomous Vehicles



### Charging Infrastructure

**1,041** Level 2 & **53** DC Fast  
  
Over **1400** Residential Chargers



### Shore Power

**14** Berths at the Port of Oakland



### Off-Road Equipment

**81** Ground Support Equipment at SFO  
  
**121** Lawn & Garden Engines

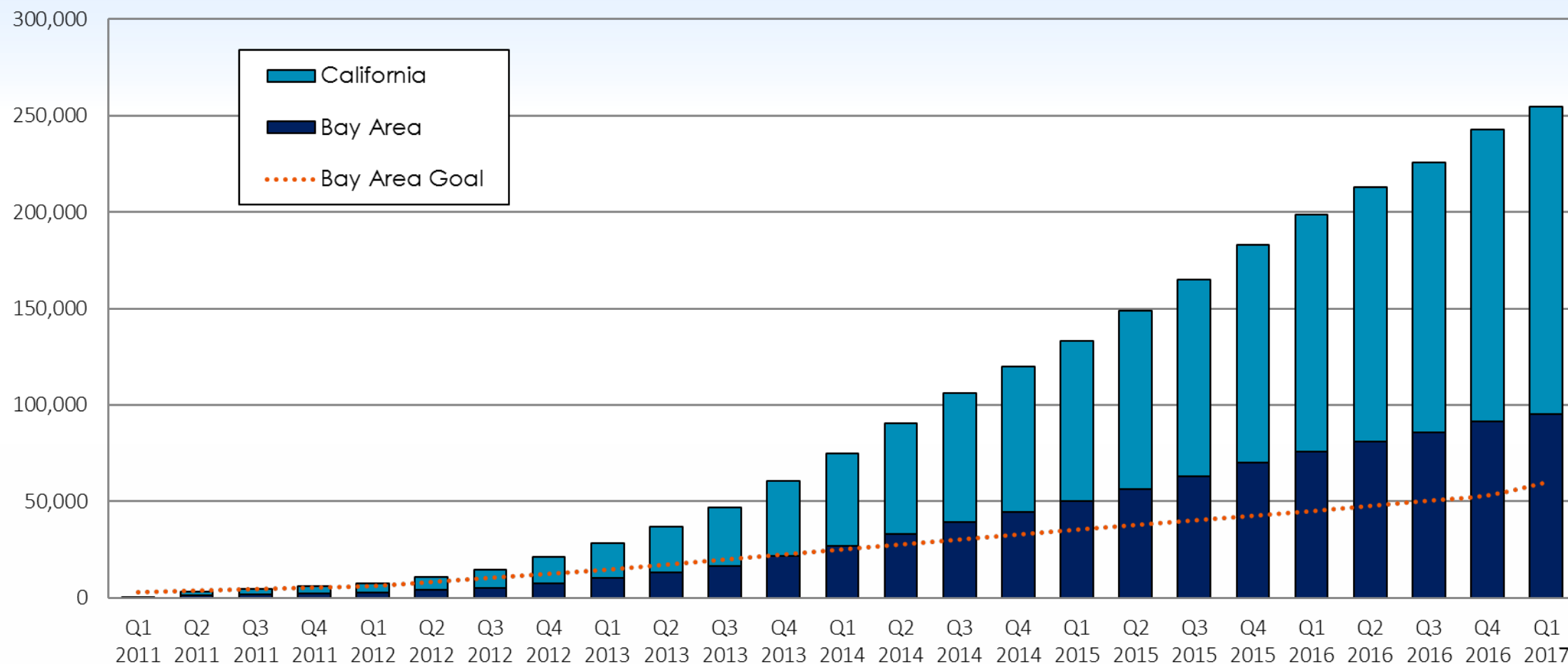


### Rail/ Caltrain

Electrify engines and **51+** miles of track  
  
**75%** Electric by 2020, **100%** by 2040



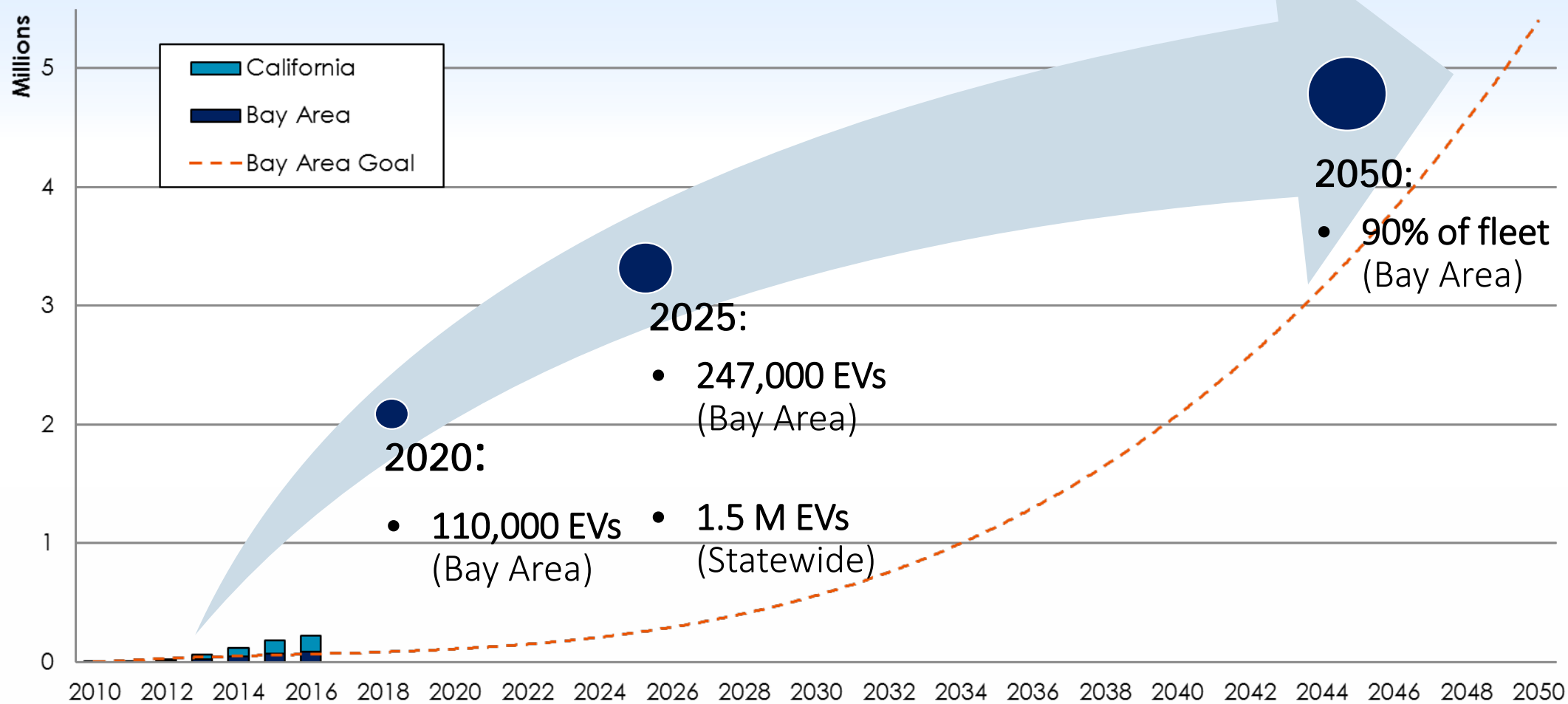
# Adoption of EVs in Bay Area and California: 2011 – 2016



\*Figures estimated from CVRP data



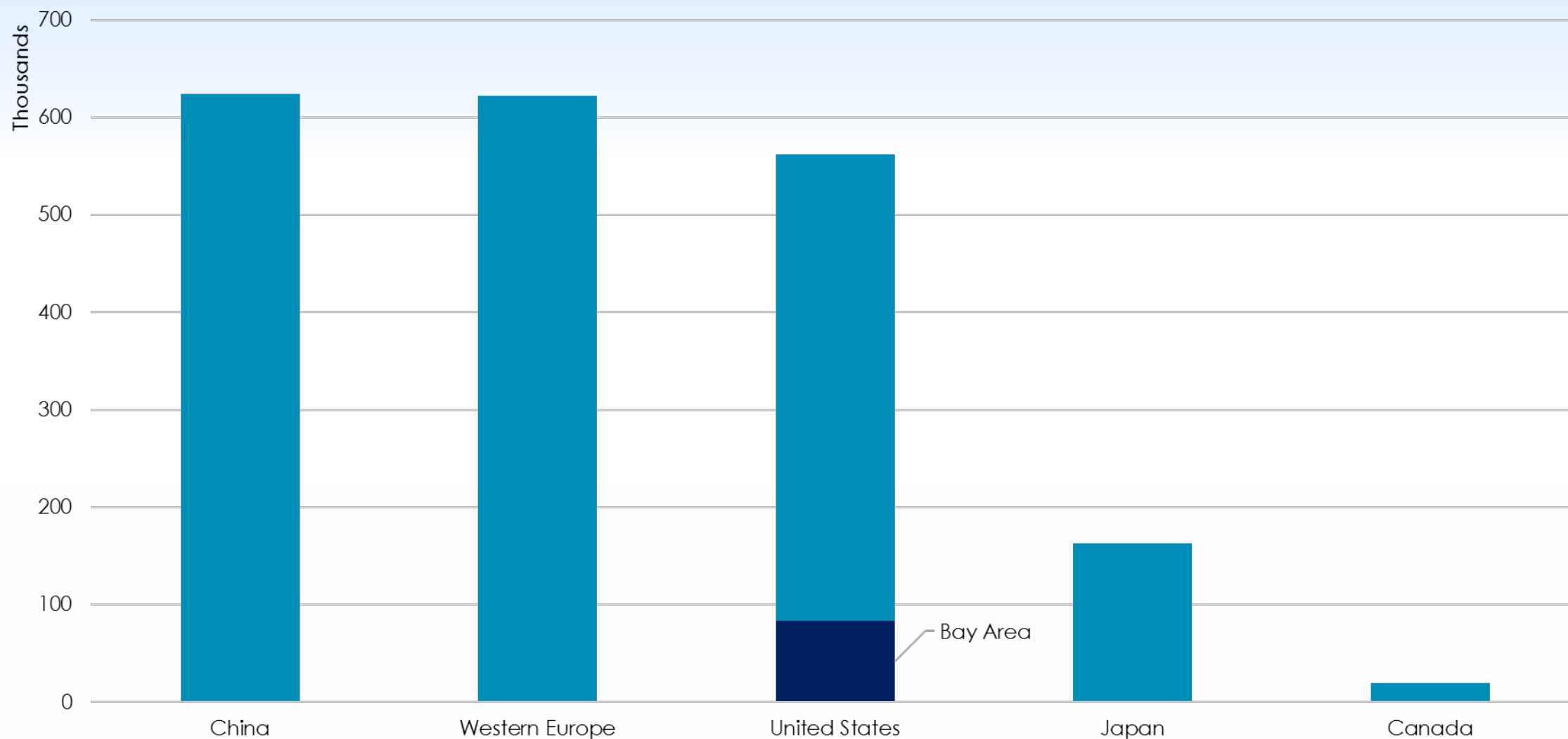
# 2020 - 2050 Adoption Goals



\*Figures estimated from CVRP data



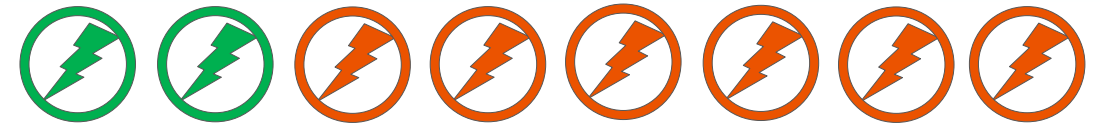
# Countries with Highest Light-Duty EV Adoption as of Dec 2016





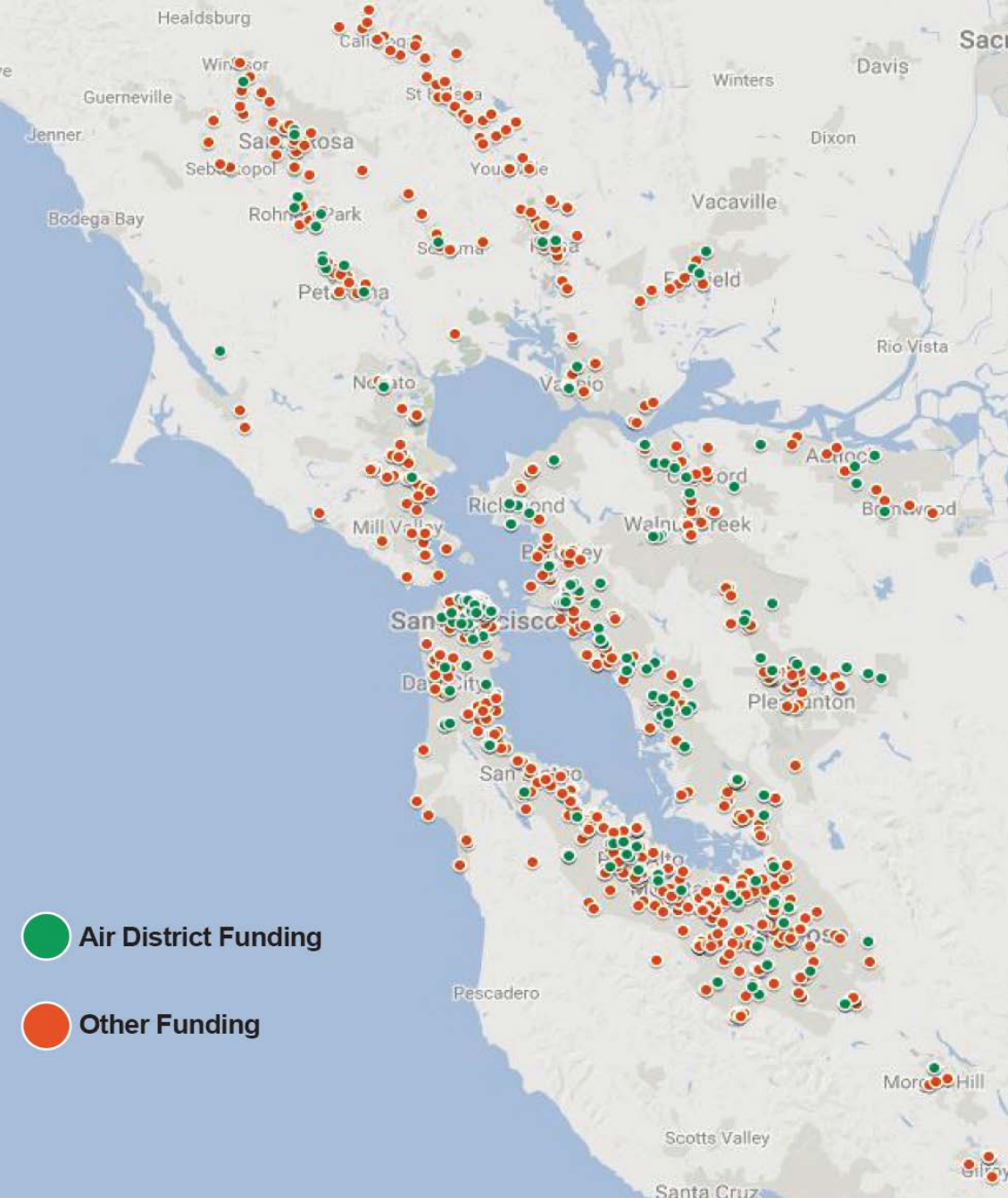
# Bay Area Public Charging Network

4,400+ Public Stations



24% Received Air District Funding

Renewable energy at 24% of installations



**Open  
Now**



**Infrastructure**

### Charge!

- ✓ *Apartments*
- ✓ *Workplaces*
- ✓ *Transit Agencies*
- ✓ *Key Destinations*



**1,200** New Level 2  
Chargers

**75** New DC Fast  
Chargers

**Coming  
later  
2017**



**Vehicles**

### Light- & heavy- duty fleets

- ✓ *Passenger Cars*
- ✓ *Motorcycles*
- ✓ *Transit & School Buses*
- ✓ *Heavy-duty Trucks*



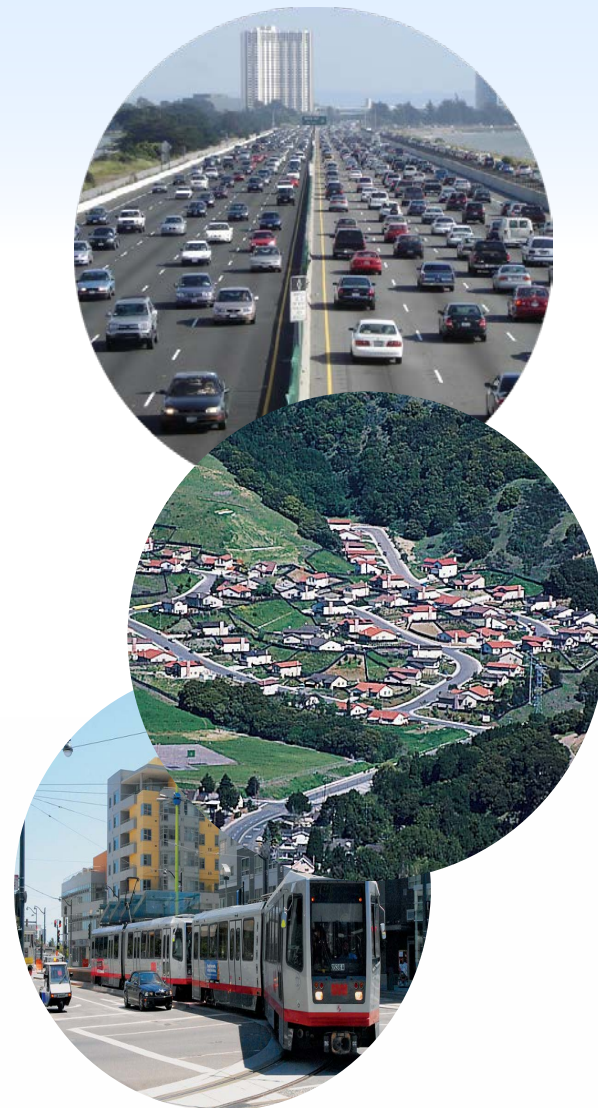
**2,000** New  
Passenger Electric  
Vehicles

**150** New Electric  
Trucks and Buses



# MTC Climate Program

- SB 375 - Sustainable Communities Strategy:
  - Directs CARB to establish per capita GHG emissions reduction targets for 2020 and 2035
  - Bay Area targets: 7% (2020), 15% (2035)





# MTC Climate Program

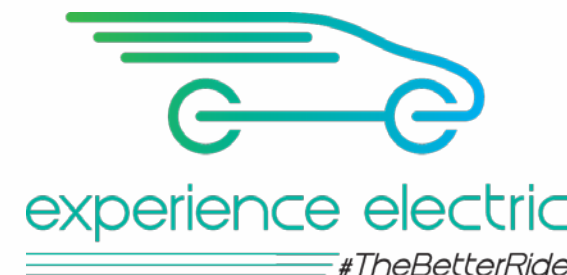
- Set of policy, marketing and incentive strategies to reduce greenhouse gas emissions
- Strategies not effectively captured in the travel model – GHG emissions calculated “off-model”
- Together, model results and off-model strategies achieve the region’s GHG emissions reduction targets





*Plan Bay Area: – 6% GHG reduction (2035)*

- Commuter Benefit Ordinance
- Car Sharing
- Vanpool Incentives
- *Clean/Efficient Vehicles (Incentives/Charging Network)*
- Innovative Grants
  - *Four pilot EVs grants - fleet & charging infrastructure*
  - *Experience Electric campaign*





# MTC Climate Program

*Plan Bay Area 2040: – 8% GHG reduction (2035)*

- Commuter Benefit Ordinance
- Car Sharing
- Vanpool Incentives
- *Clean Vehicles (Incentives/Charging Network)*
- Trip Caps
- Targeted Transportation Alternatives
- Bike Share/Bike Infrastructure

Plan  
Bay Area  
2040





# MTC Climate Program

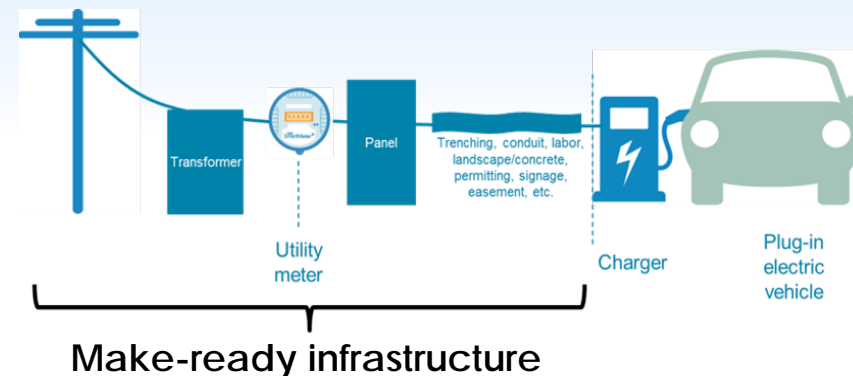
- \$22 million Climate Program allocation through MTC's One Bay Area Grant Program (OBAG2)
  - Focus on meeting 2020 target
  - \$10 million for Electric Vehicle Programs: charging infrastructure and incentive programs
    - MTC/Air District coordination – MTC proposal to contribute to existing/upcoming Air District programs



# PG&E's EV Infrastructure Programs

## APPROVED: EV Charge Network Program

- \$130 million over three years
- Install up to 7,500 Level 2 charging stations at workplaces and multi-unit dwellings that can host 10 or more stations
- 20% commitment to Disadvantaged Communities
- [Scheduled to open late 2017](#)



## Proposed Infrastructure Programs

### Fast Charge: \$22M; 5 years

- 50+ plazas for DC Fast Charging
- Corridor and urban sites
- Plan for variety of power requirements (50 – 350 kW)
- Additional incentives for disadvantaged communities

### FleetReady: \$211M; 5 years

- Make-ready infrastructure for non-light-duty fleets (e.g. delivery vans, transit buses, forklifts, truck refrigeration)
- Program sized to meet forecasted adoption
- Additional incentives for disadvantaged communities, school and transit buses

### Priority Review: \$20M; 1 year

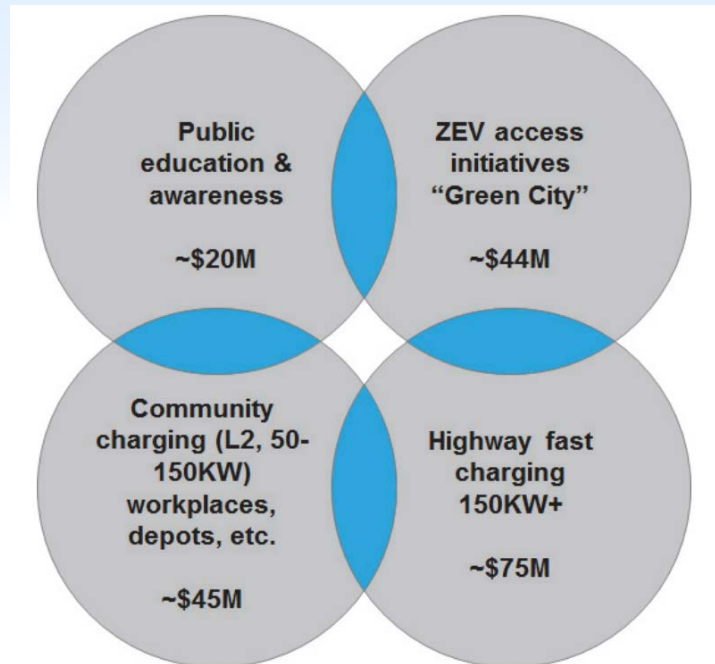
- Home-charger information toolset
- MD/HD fleet demonstration
- Idle reduction demonstration
- School bus over-generation demo.
- Open RFP for projects





# Volkswagen Electrify America

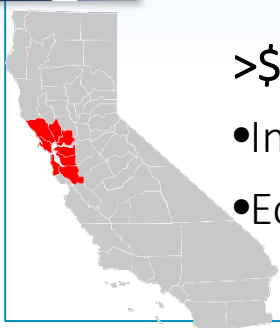
- Settlement of diesel emissions cheating suit
- \$2 Billion total program, **\$800 million in CA**
- Investments in infrastructure and education over 10 years (4 cycles)
- Focus on San Francisco and San Jose metro areas
- More information: [www.ElectrifyAmerica.com](http://www.ElectrifyAmerica.com)



Cycle 1 (Q1 2017 – Q2 2019)	Cycle 2 (Q3 2019 - Q4 2021)	Cycle 3 (Q1 2022 – Q2 2024)	Cycle 4 (Q3 2024 – Q4 2026)	Full 10 years
<b>\$200M</b>	<b>\$200M</b>	<b>\$200M</b>	<b>\$200M</b>	<b>\$800M</b>



# Future Opportunities Continued



>\$27.2 Million through June 30, 2018 in Bay Area

- Infrastructure & Vehicles
- Education and Outreach



>\$130 Million over 3 years in PG&E Service Area

- Infrastructure & Vehicles
- Proposed additional Medium- and Heavy-Duty & DC Fast Charger programs



\$800 Million over 10 years throughout California

- Infrastructure and Education
- “Green City” initiatives



\$695 Million over 10 years throughout California

- Cap & Trade
- Zero-emission vehicles and infrastructure
- Pilot Programs



# Air District and MTC Next Steps

- Continue to *collaborate with local stakeholders* to further support electric vehicle adoption:
  - ✓ Heavy-duty and light-duty fleets
  - ✓ Infrastructure at multi-dwelling units, workplaces, transit centers, and key destinations, and next generation faster-charging network
  - ✓ Renewable energy for charging infrastructure
  - ✓ Education and outreach
- Continue to *proactively seek out additional sources of funding and leverage District & MTC funds*