AGENDA: 4

Bay Area Air Quality Management District
Mobile Source Committee

Projects with Proposed Awards over $100,000

February 22, 2018

Madeleine Storelli
Staff Specialist

Overview

- Background
- Proposed projects with awards over $100,000
- Recommendations

CMP, MSIF, & TFCA

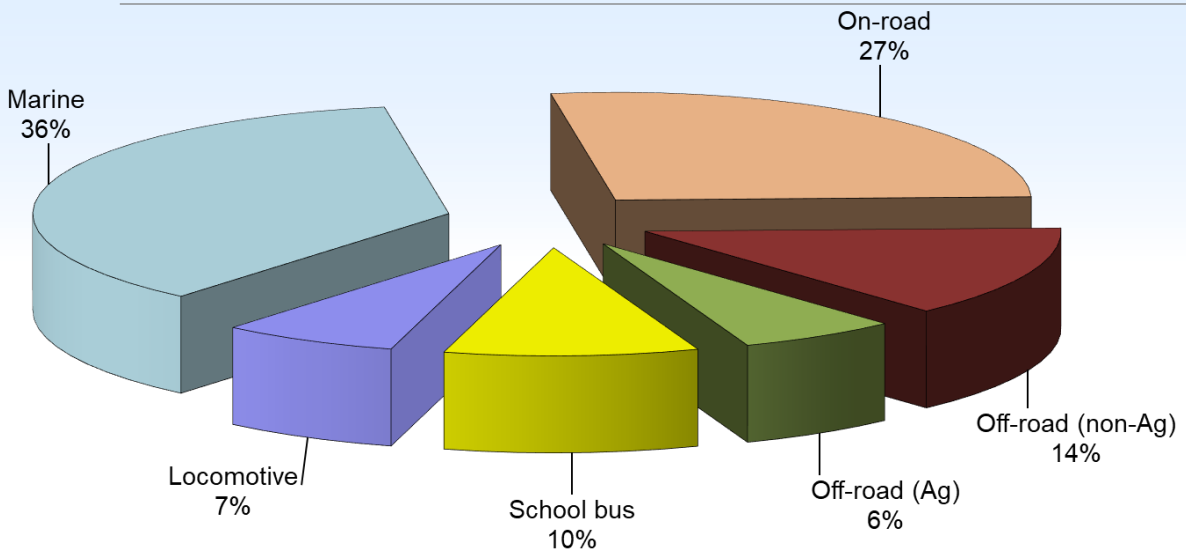
- **Carl Moyer Program (CMP)**
  - Created in 1998 to reduce emissions from heavy-duty engines
  - Voluntary program that funds surplus emission reductions
- **Mobile Source Incentive Fund (MSIF)**
  - AB 923 allowed for additional $2 motor vehicle registration fee surcharge (12/04)
  - CMP and Lower Emission School Bus Program (LESBP) projects eligible for MSIF funding
- **Transportation Fund for Clean Air (TFCA)**
  - Statutory authority set forth in California Health and Safety Code Sections 44241 and 44242
  - Funding provided by a $4 surcharge on motor vehicles
    - 60% of TFCA funds awarded directly by the Air District
    - Remaining 40% is distributed to the 9-Bay Area Congestion Management Agencies

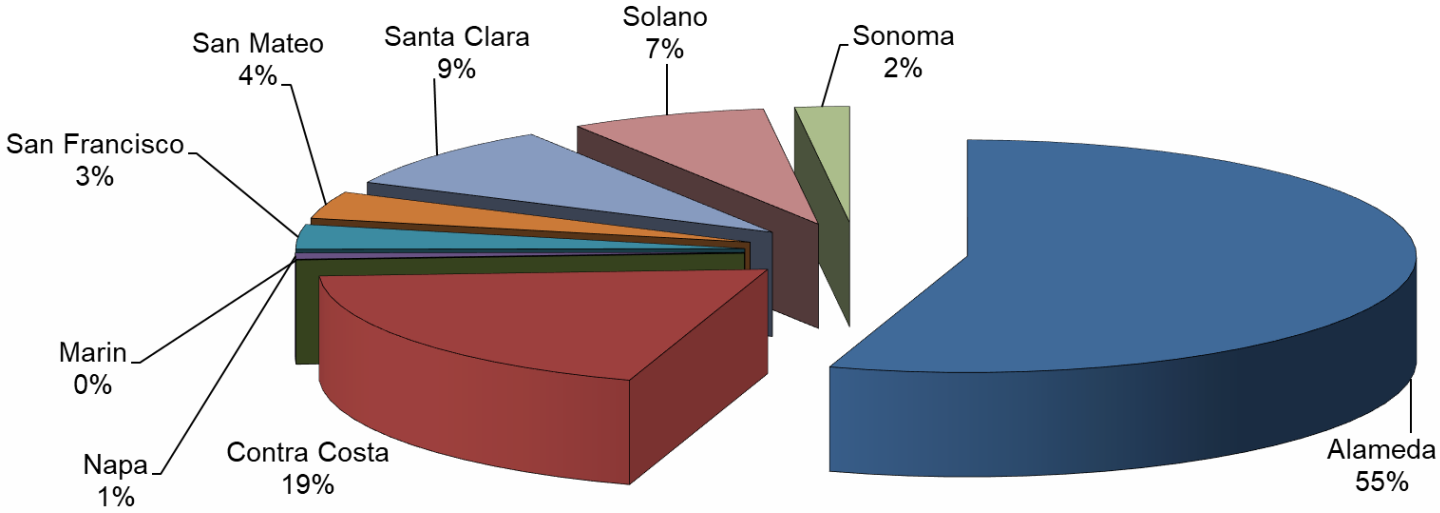
CMP Year 19

- **On 3/1/17 Air District Board of Directors:**
  - Approved participation in CMP Year 19
  - Authorized Executive Officer/APCO to execute contracts and amendments with grant awards up to $100,000
- **CMP Project Recommendations over $100k:**
  - 2 Projects to reduce emissions from 3 school buses
  - $495,000 in total awards
  - Emission reductions: Over 0.3 Tons Per Year (TPY) of criteria pollutants

CMP and MSIF Funds

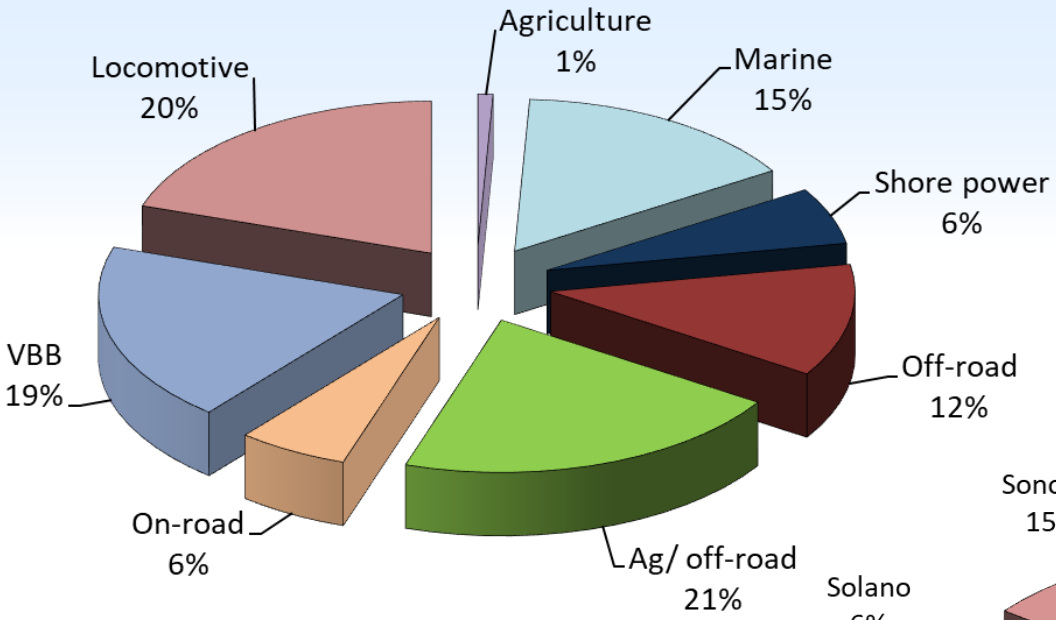
Awarded as of 2/1/18

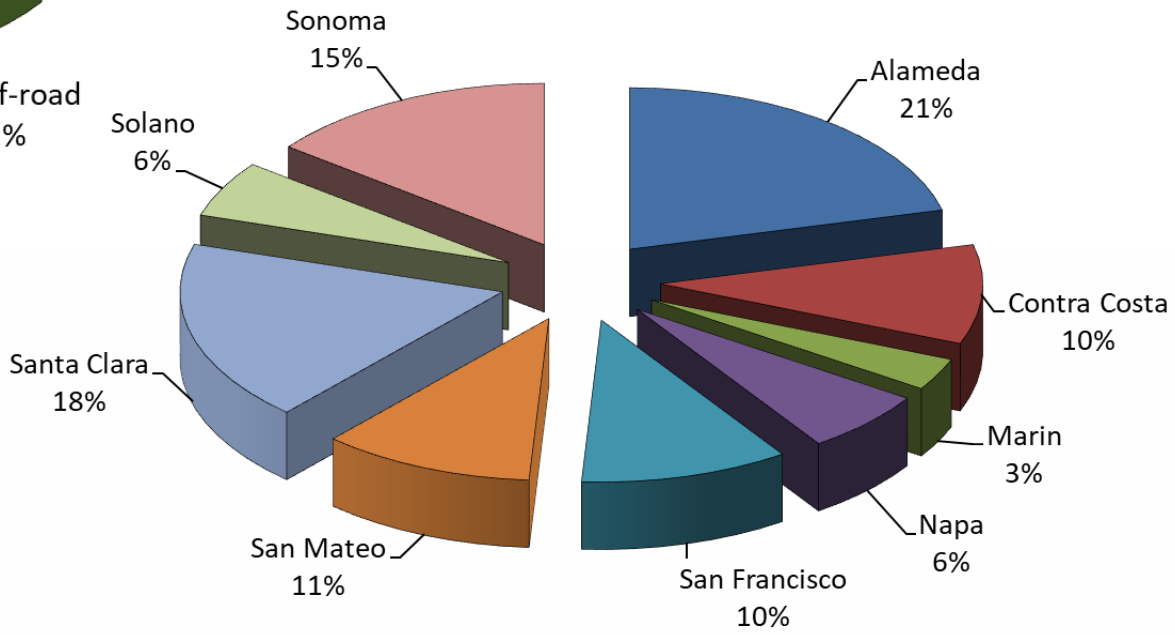




CMP and MSIF Funds

Awarded since 2009





TFCA

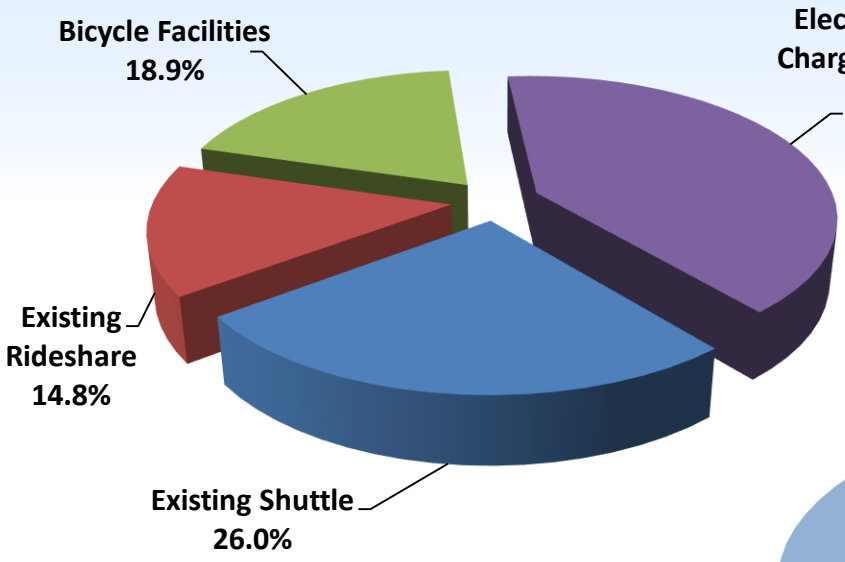
- **Board approval of FYE 2018 TFCA Program**
  - 4/19/17 - Authorized Executive Officer/APCO to execute contracts and amendments with grant awards up to $100,000 and allocation of $29.24 million in TFCA funds
  - 8/2/17 - Adopted policies and evaluation criteria
- **TFCA project recommendations over $100k:**
  - No project with proposed individual grant award over $100,000
  - Three projects were awarded funding below $100,000 between 1/4/18 and 2/1/18

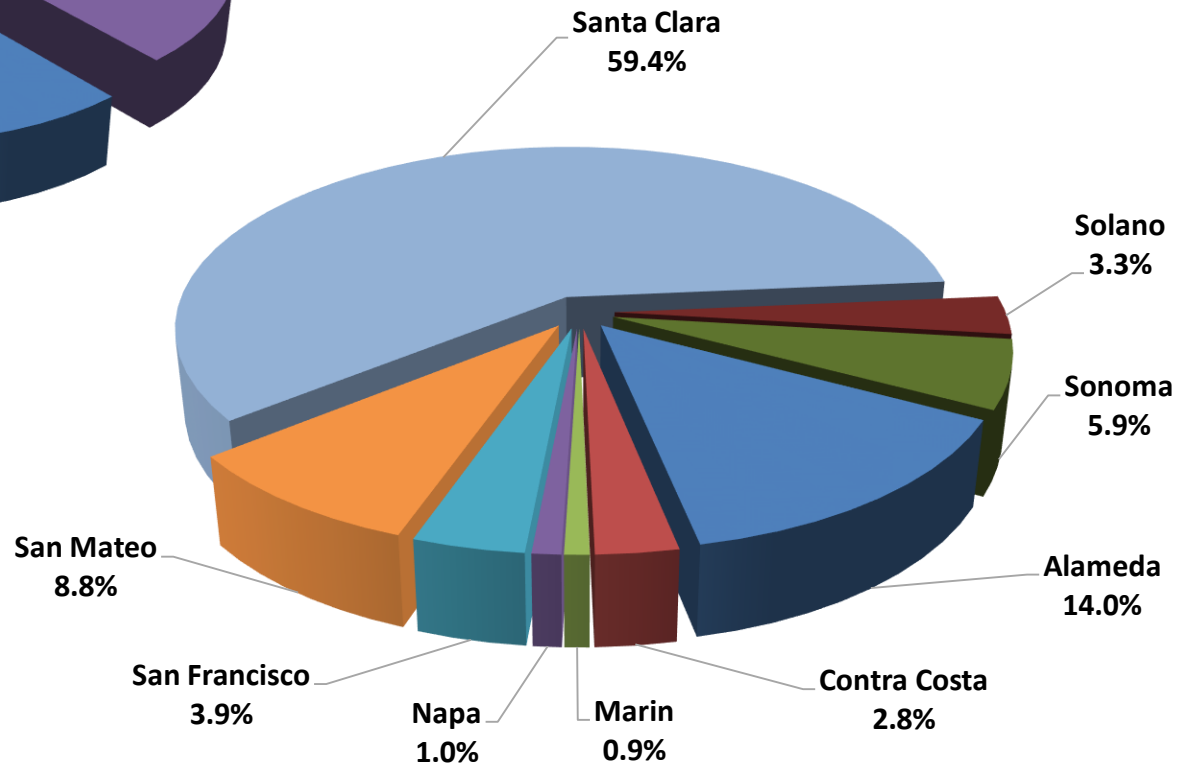
TFCA Funds Awarded

by Project Category and by County

(For eligible projects evaluated between 7/1/17 and 2/1/18)

Total = $7.67 M (out of $29.24)





Recommendations

Recommend the Board of Directors:

- Approve proposed grant awards over $100,000 as shown in Attachment 1; and
- Authorize the Executive Officer/APCO to enter into all necessary agreements with applicants for the recommended projects.

AGENDA: 5

Update on Regional Efforts to Deploy Light Duty Electric Vehicles and Infrastructure

Mobile Source Committee Meeting

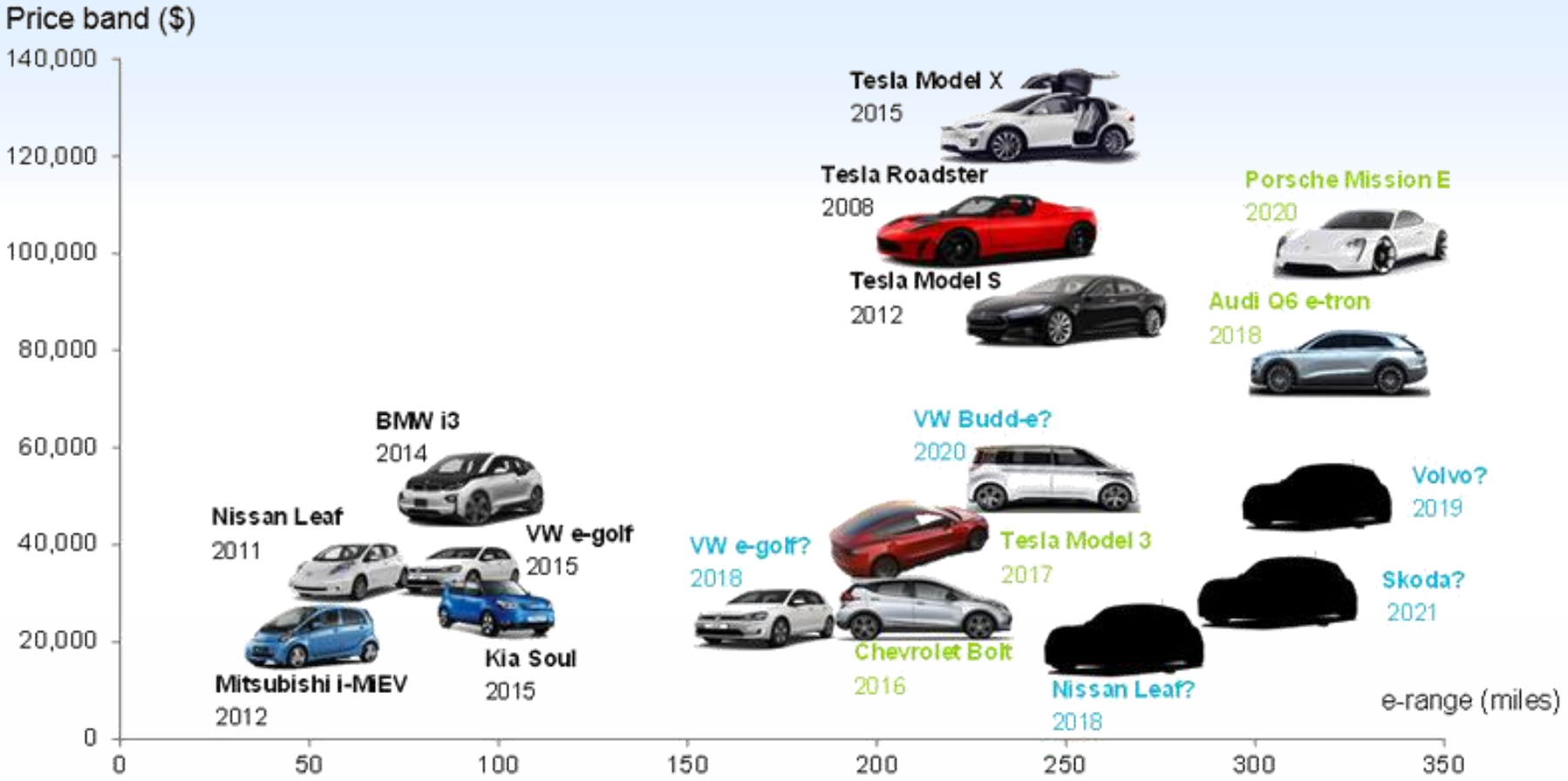
February 22, 2018

Ranyee Chiang
Technology Implementiaon Officer

Outline

- Electric Vehicle Overview
- Air District's EV Investments and Activities
  - Planning
  - Incentives
  - Partnerships and Outreach
- Future Plans
  - Leveraging other efforts
  - Equitable access to EV technology
  - Expanding partnerships, outreach, evaluation

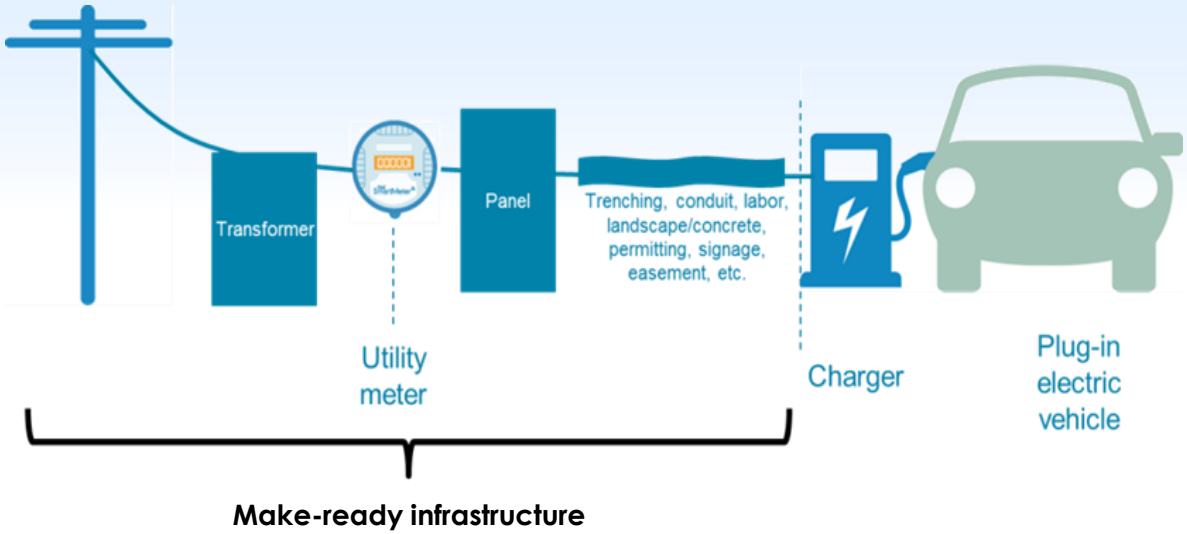
EV Models in the Market (by range and price)



Note: Selected US battery electric vehicles (BEV) only. Positions are representative and do not indicate exact prices or range. Back labels = currently available, green labels = forthcoming models with specifications and timeline released. Blue labels = announced but limited details confirmed. Range is based on manufacturers statements, not on any specific test cycle.

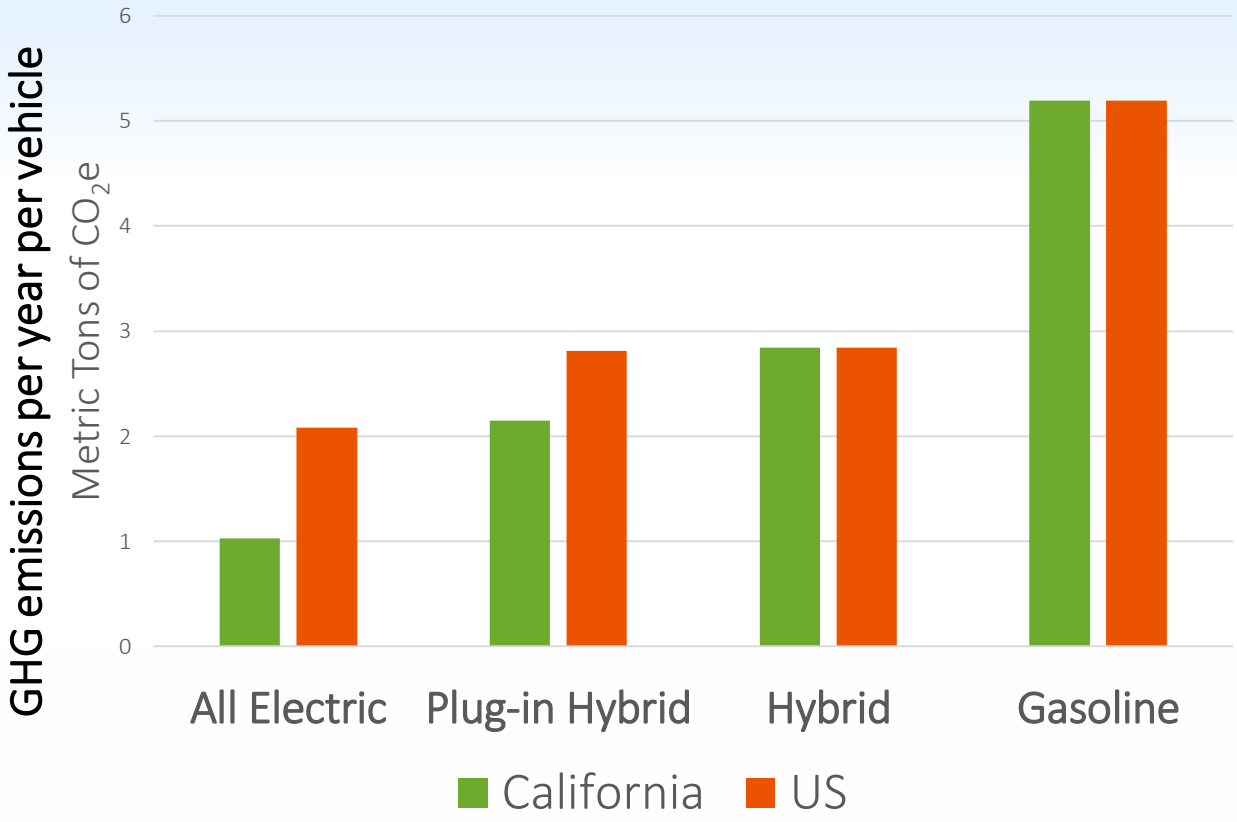
Bloomberg NEW ENERGY FINANCE

Electric Vehicle Supply Equipment (EVSE), Charging infrastructure



Level 1	Ordinary household outlet		4.5 miles of range per hr
Level 2	Outlet like what is used by electric dryer or oven	~$2000	26 - 70 miles of range per hr
DC Fast Charging (includes Tesla, CCS, CHAdeMO)	Dedicated station	~$15,000 - $100,000	240 miles of range per hr

Lifecycle Greenhouse Gas Emissions by Vehicle Type



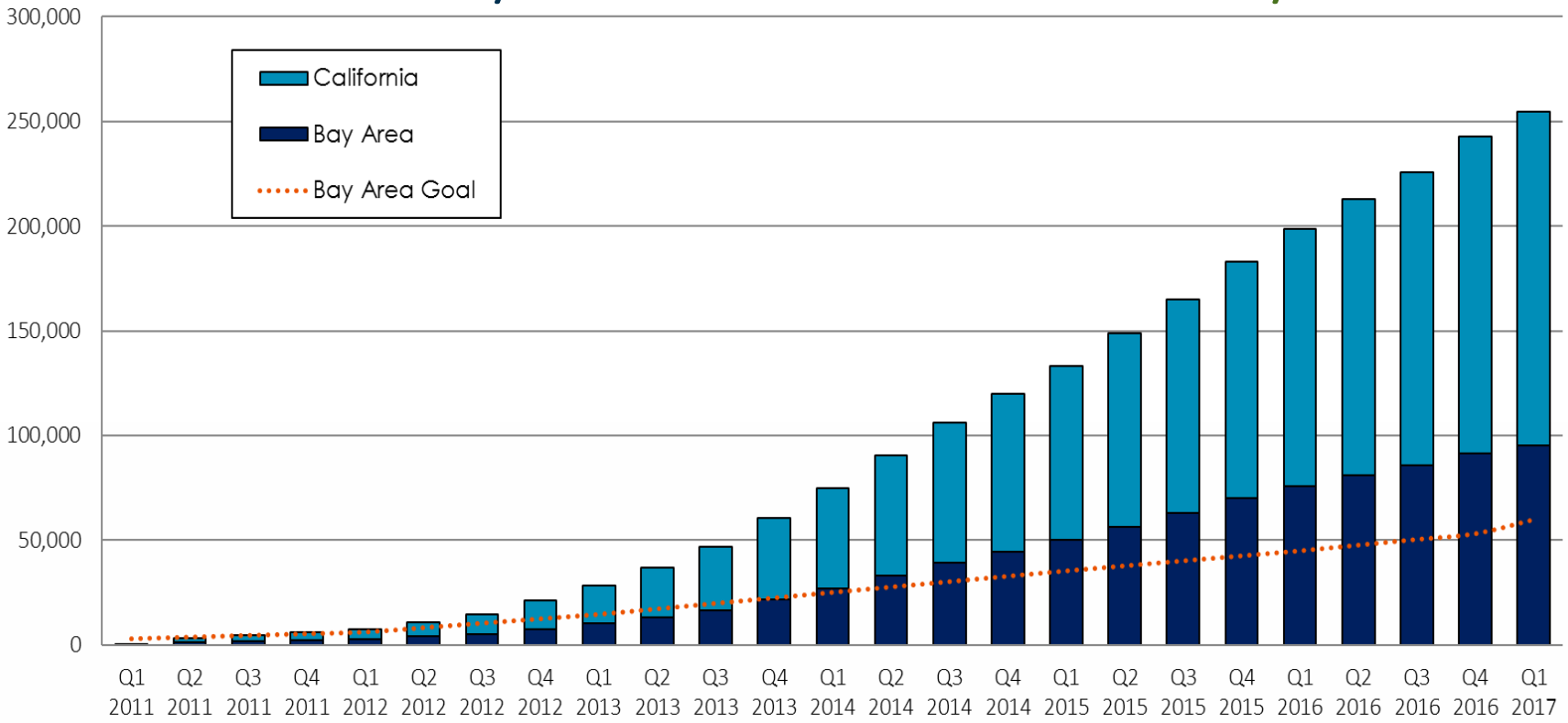
Argonne National Laboratory, National Renewable Energy Laboratory (2016)
https://www.afdc.energy.gov/vehicles/electric_emissions.php

Adoption of EVs in Bay Area and California

Current Adoption:
~100,000 EVs
2% of Bay Area fleet

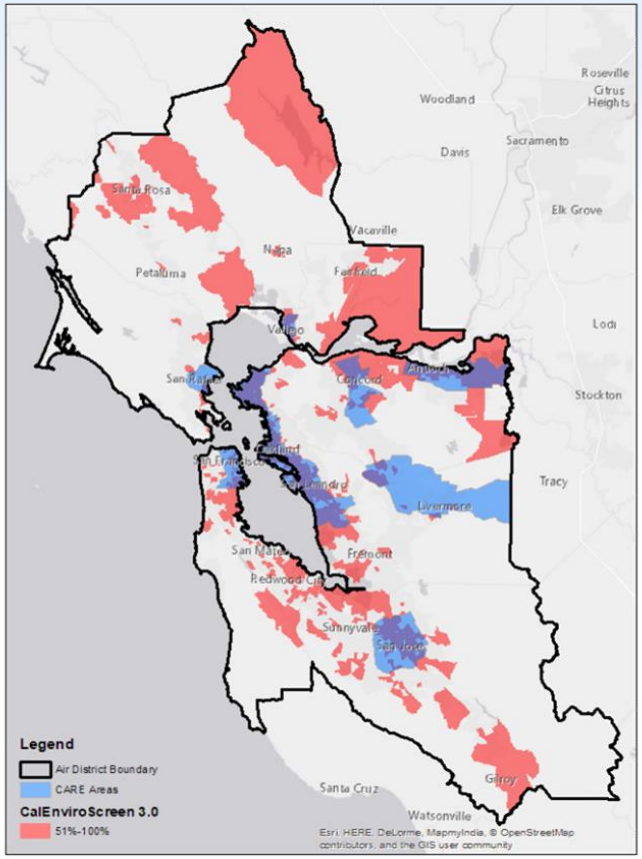
2017 Clean Air Plan EV Goal:

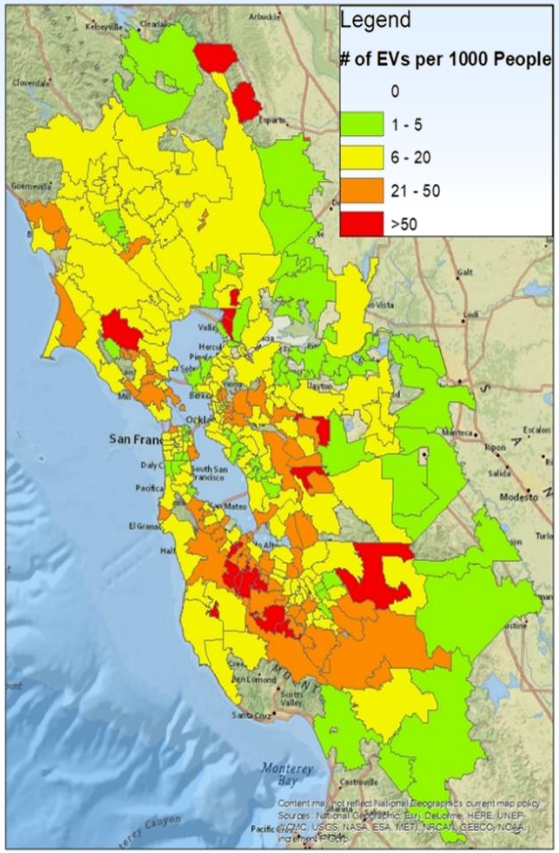
90% of fleet by 2050

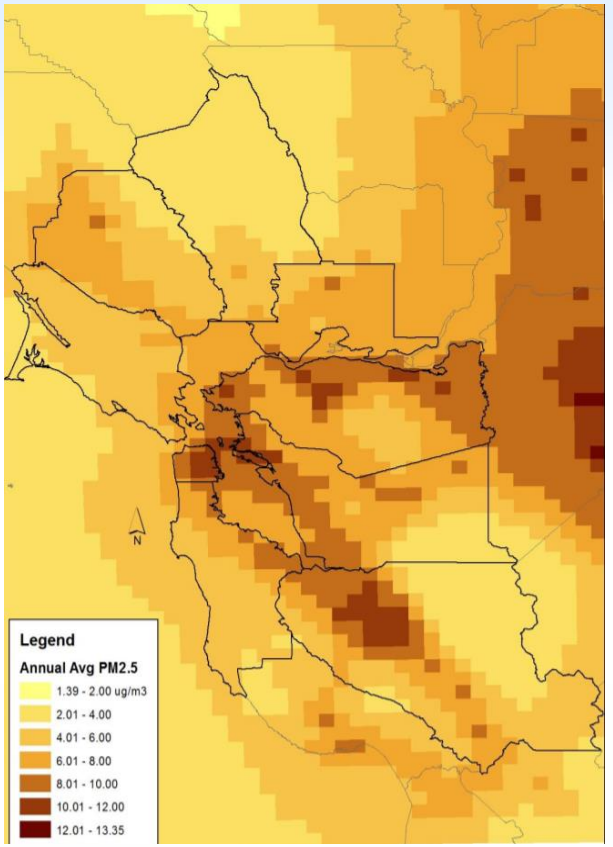


Estimated from CVRP data

Geographic Distribution of EV Adoption and Disadvantaged Communities







Care and CalEnviroscreen 3.0

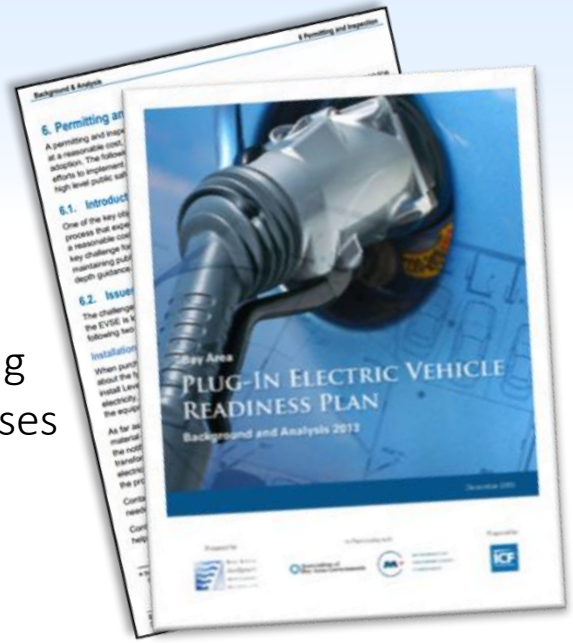
EV Adoption

Annual Average PM2.5

California Department of Motor Vehicles, 2011 Air District Report: Health impact analysis of PM

Bay Area EV Readiness Plan (2013)

- **Strategies to accelerate adoption:**
  1. incentives
  2. education & outreach
  3. coordination to further remove barriers to adoption
- **Local Government Readiness:** Building codes, zoning, parking regulations, local ordinances, permitting/inspection processes
- **Siting Element:** Plan for deploying residential, workplace, private and publicly available charging infrastructure
- **Outreach**: Training for local officials and the public
- **EV Market Development:** Attract PEV and EVSE manufacturing
- **Planning Coordination:** with SB 375, Plan Bay Area 2040



www.baaqmd.gov/evready

Air District Investment in EV Technology (2011-2017)

$11M

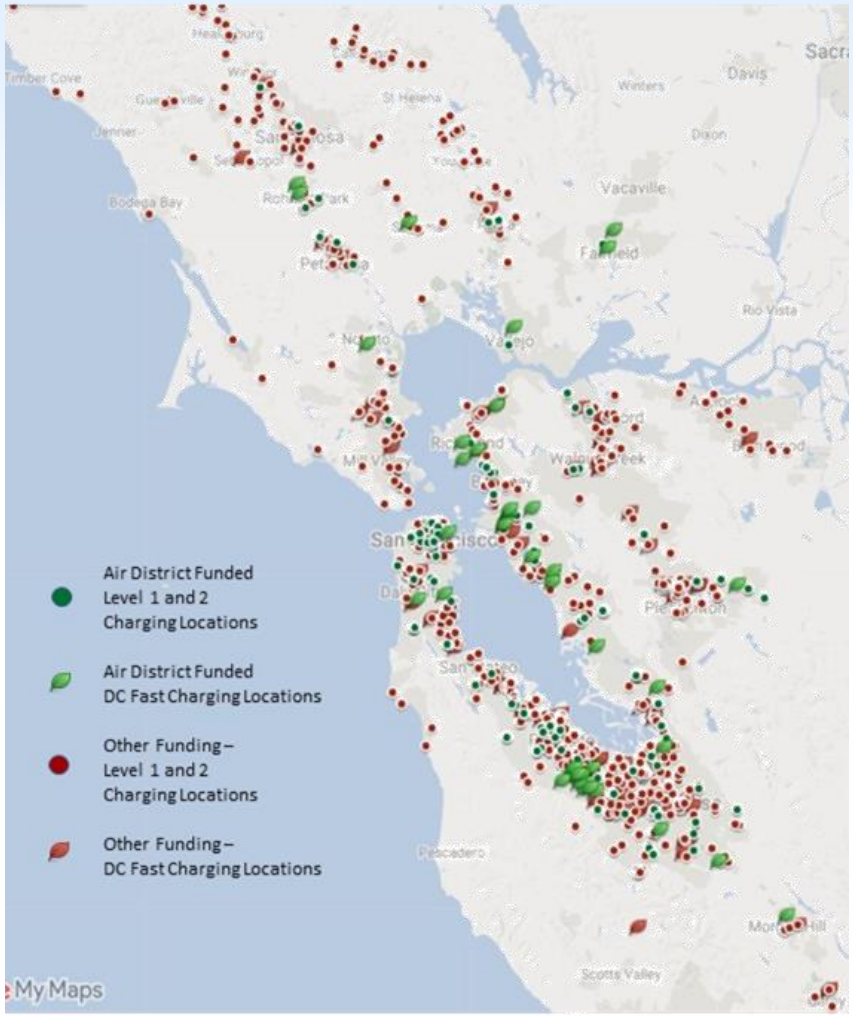
Charging Infrastructure

- ✓ **1,041** Level 2 Chargers
- ✓ **53** DC Fast
- ✓ Over **1,400** Residential Chargers

Light Duty Vehicles

- ✓ **1,520** Battery Electric Cars
- ✓ **41** Plug-in Hybrids
- ✓ **6** Battery Electric Motorcycles

Charging Infrastructure



U.S. Department of Energy, Alternative Fuels Data Center

Current: 3,463 public charging locations, including 158 DC Fast Chargers

Need: 12,397

chargers needed by 2020 to support ~250,000 Evs

National Renewable Energy Lab (2014)

Outreach and Partnerships

EV Coordinating Council – Quarterly forum for EV stakeholders organized by Air District

- Topics include energy pricing and storage, technology trends, green building code update, partner programs, Low Carbon Fuel Standard, MyGreenCar app demo, shared mobility

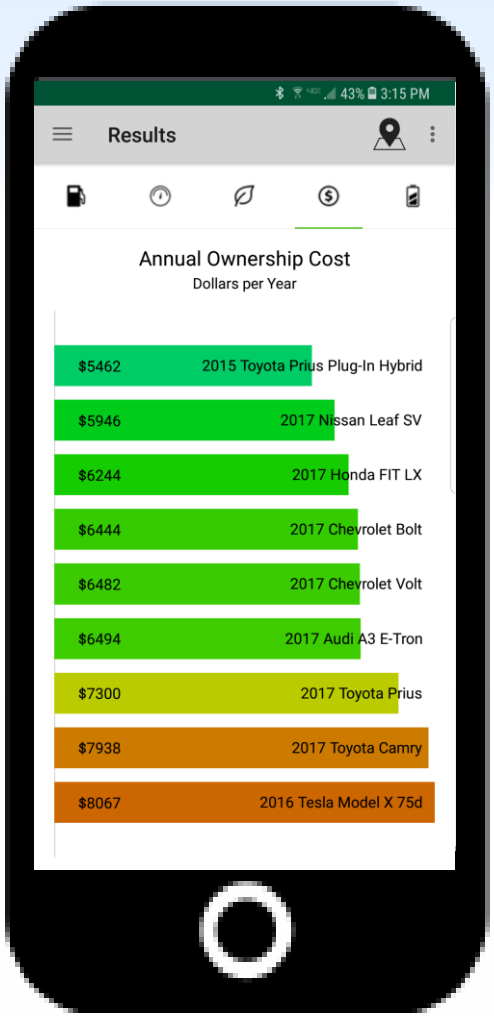
Organizations and events

- Examples include National Plug-in Day and Drive Electric Week, Joint Venture Silicon Valley, PEV Collaborative/VELOZ, ACT Expo, CalStart, Local Government Sustainable Energy Coalition, facility managers, building owners and managers associations, local governments

Stakeholder group

- 1,000+ regional contacts

Consumer App to Evaluate EVs on Costs, Emissions, Range



Based on individual driving patterns, compare vehicles on:

- fuel costs
- greenhouse gas emissions
- annual/total cost of ownership
- whether vehicles' batter range can meet driving needs
- available incentives

estimated for one example Bay Area driver

BERKELEY LAB

MyGreenCar.com

PG&E's EV Infrastructure Programs

- $130 million over three years
- Install make-ready infrastructure (Level 2) for up to 7,500 stations at workplaces and multi-unit dwellings that can host 10 or more stations
- 20% commitment to Disadvantaged Communities
- Opened Jan 2018

https://www.pge.com/en_US/business/solar-and-vehicles/your-options/clean-vehicles/charging-stations/ev-charge-network.page

Proposed Future Infrastructure Programs

Fast Charge: $22M; 5 years
- 50+ fast charging plazas
- Corridor and urban sites
- Plan for variety of power requirements (50 – 350 kW)

FleetReady: $211M; 5 years
- Make-ready infrastructure for non-light-duty fleets (e.g. delivery vans, transit buses, forklifts, truck refrigeration)

Priority Review: $20M; 1 year
- Demos for MD/HD, idle reduction, school bus
- Open RFP for projects

Electrify America

- Settlement of Volkswagen diesel emissions suit
- $2 billion program, **$800 million in CA** from 2017 - 2027
- Cycle 1 2017 2019
  - Focus on infrastructure and awareness
  - **~$9 million in Bay Area non-highway infrastructure**
  - **$75 million in fast charging across California (>50 sites)**

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**
$200M	**$200M**	**$200M**	**$200M**	**$800M**

www.ElectrifyAmerica.com

FYE 2018
Air District EV Incentive Programs

Funding for up to…

Charge!
Open Now

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

1,200 New Level 2 Chargers

75 New DC Fast Chargers

Zero-emissions Vehicle Fleets
Spring-2018

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

2,000 New Passenger Electric Vehicles

150 New Electric Trucks and Buses

NEW! Equitable Access to EV Technology

WHO

- Low-income residents (≤400% of Federal Poverty Level, e.g. <$97K for 4 person household)
- Environmentally disadvantaged areas

WHAT

$2,500 - $9,500 to replace older vehicle with:

- newer, cleaner vehicle (e.g. hybrid, plug-in hybrid, electric), or
- $ for transit pass

WHEN

- Finalizing agreement with ARB ($5M over 2 years)
- 3 – 6 mos to set up program (dealerships, application, database, scrappers)
- Small pilot before full launch

EV Outreach, Partnerships, Evaluation

Air District Board approved funding partnership with Metropolitan Transportation Commission (Nov 2017)

- $5 million over 5 years
- Supports EFMP+Up & Charge Programs

EV Outlook

Good news…

EVs estimated to be cost competitive (on an unsubsidized basis) beginning in 2025

Remaining challenge…

Lack of charging will still be a barrier to adoption

Bloomberg New Energy Finance

Challenges and Future Focus

- Monitor landscape & adjust efforts accordingly
- Coordinate investments
- Target investments to increase density where needed, fill in gaps, and focus on equity
- Continue efforts in:
  - Outreach & Education
  - Electrifying Transportation for All
  - Decarbonizing Electricity

AGENDA: 6

Bay Area Air Quality Management District
Mobile Source Committee

Air District Grant Programs Overview

February 22, 2018

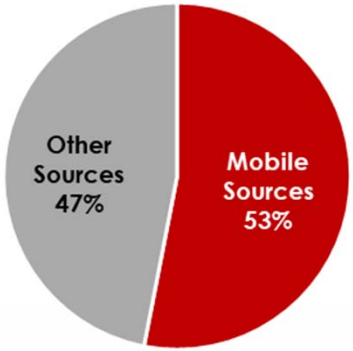
Karen Schkolnick
Director of Strategic Incentives Division

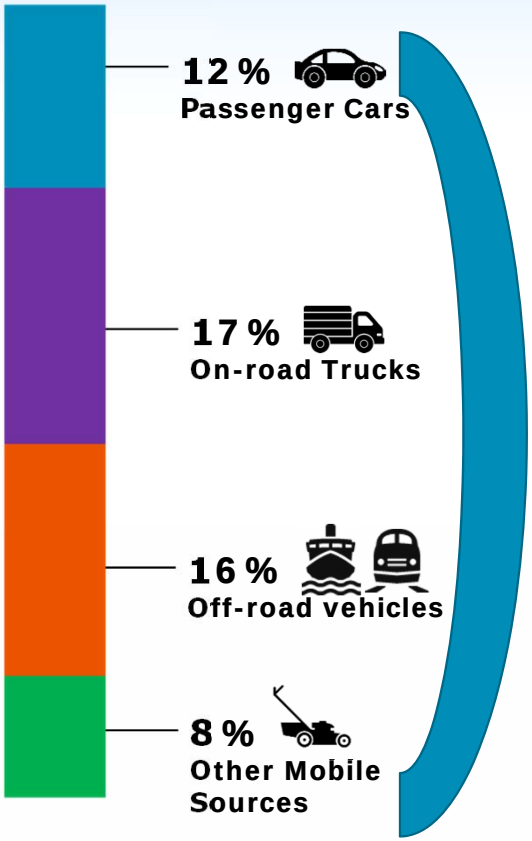
Overview

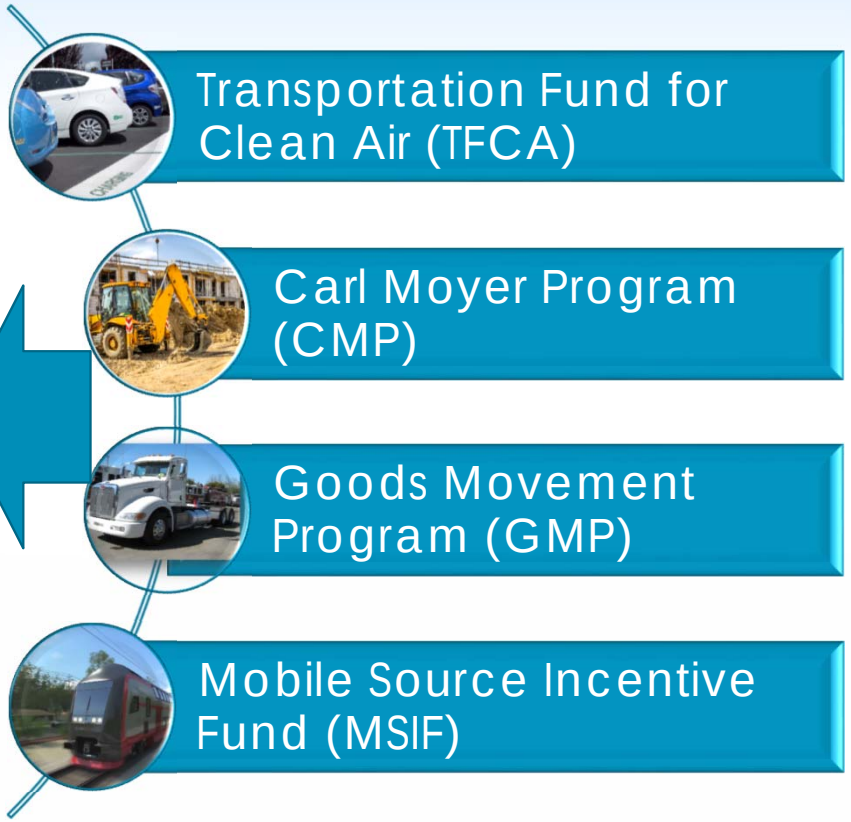
- Background
- 2017 Funding Awards & Results
  - By county and project category
  - By funding source
  - Emissions reduced
- Five Year Summary (2013-2017)
- 2018 Priorities & Funding Projection

Background: Sources of Criteria Pollution & Grant Funding

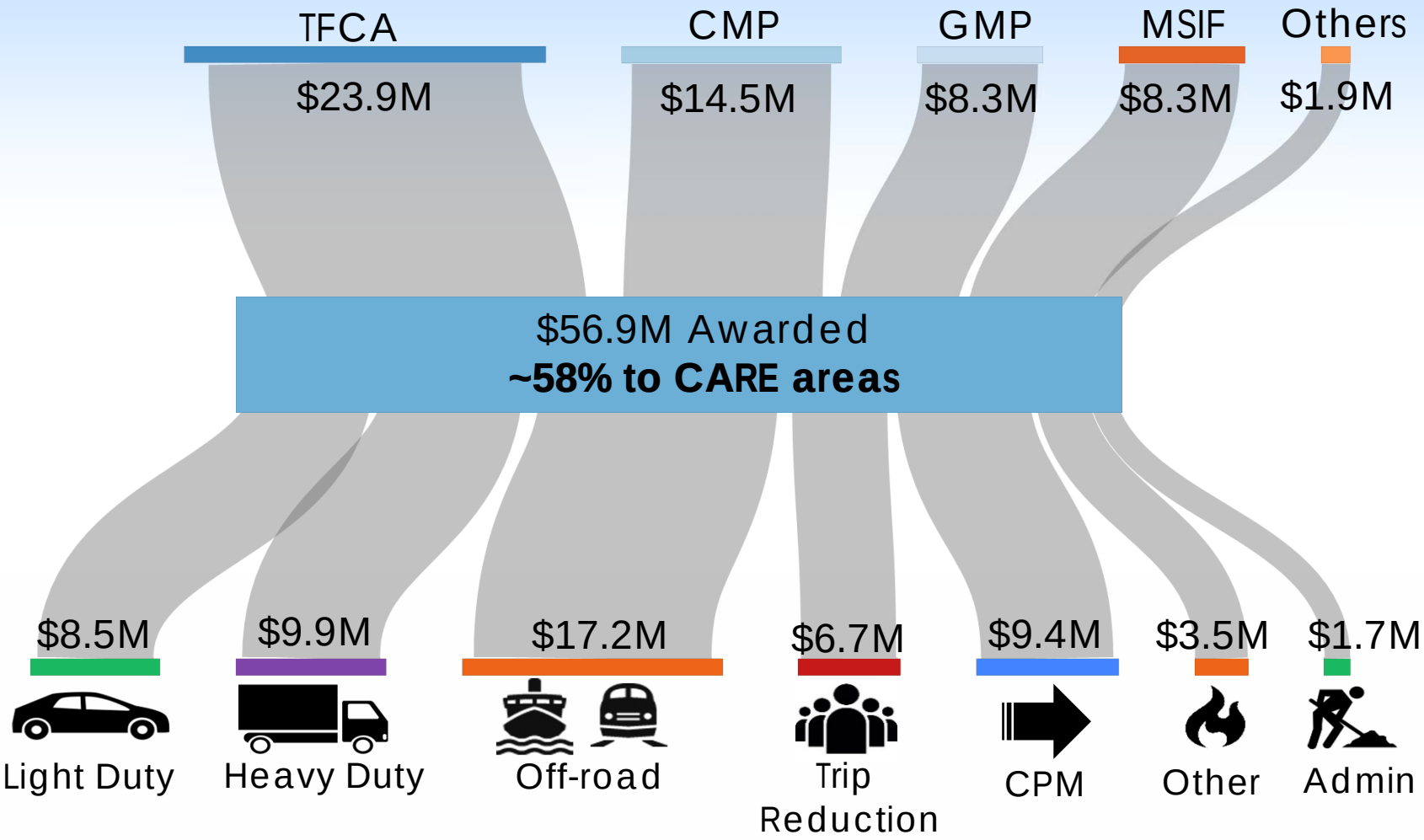
Bay Area 2015 Total: 667 tons/day





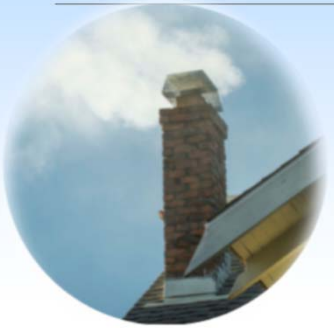


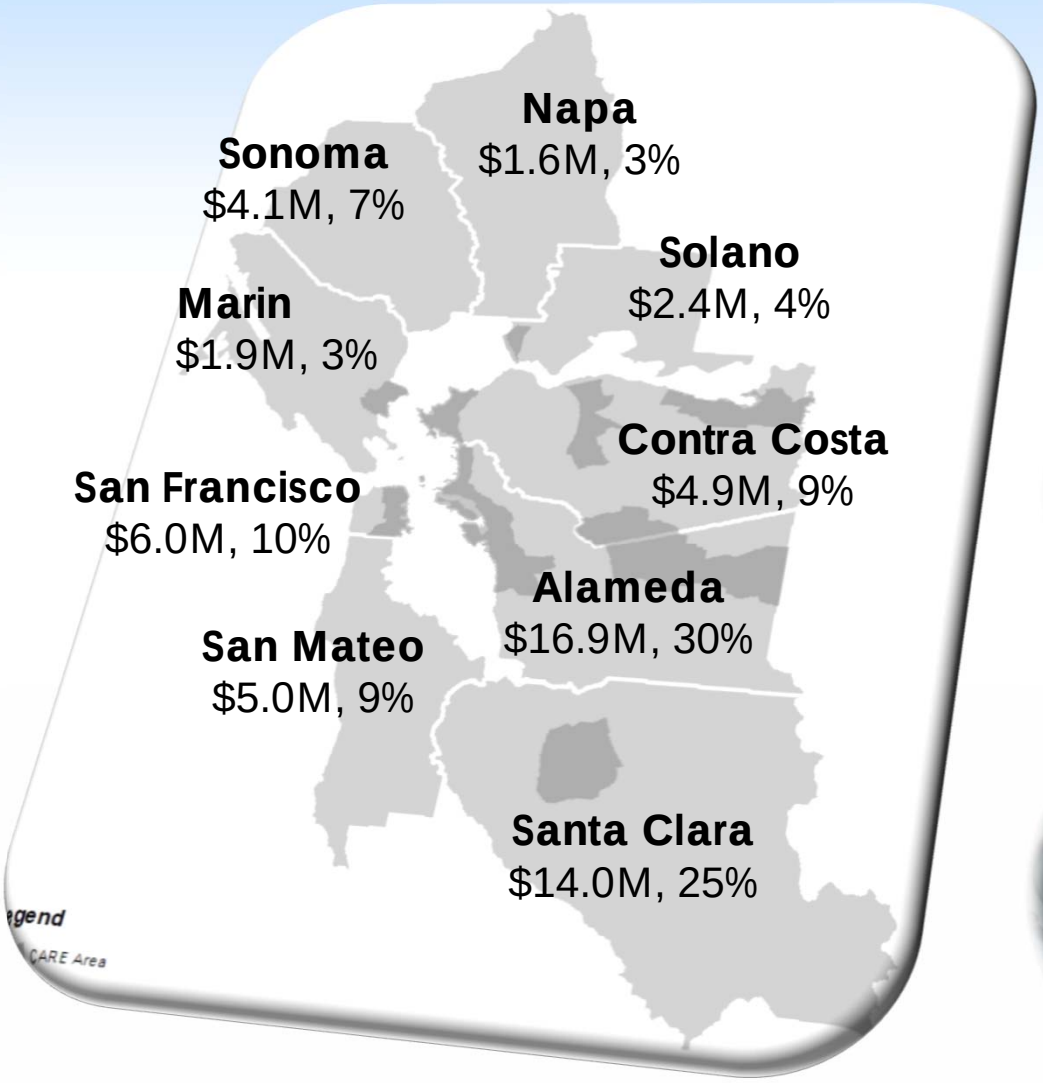
2017 Awards by Funding Source & Project Type



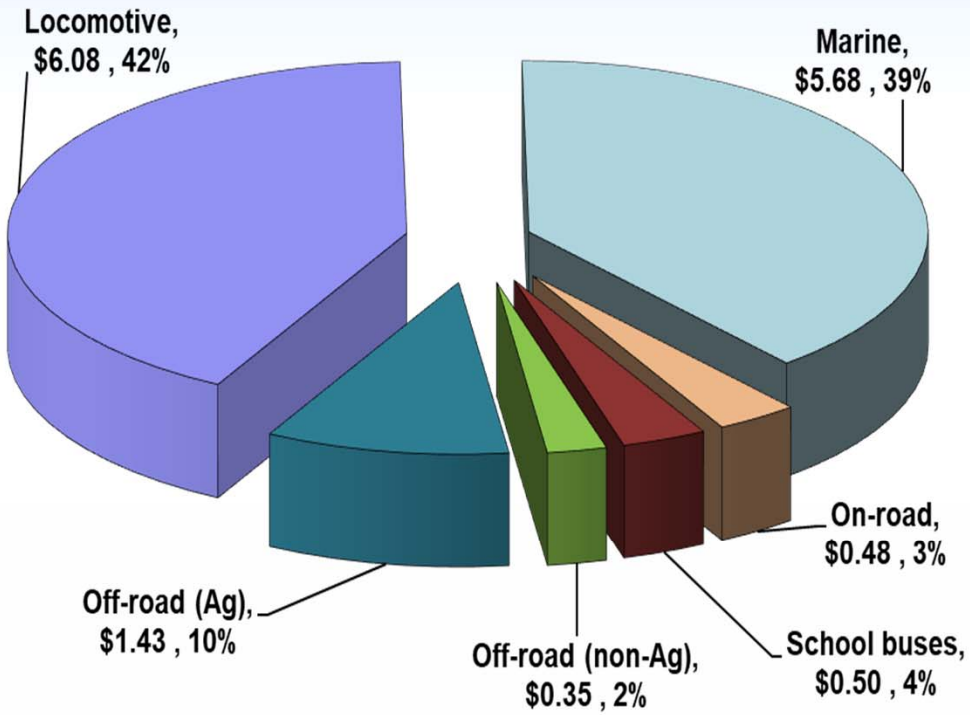
* Other funding sources include U.S. EPA's DERA, ConocoPhillips Carbon Offset Funds, National Fish and Wildlife Foundation & Air District's general fund

2017 Awards by County : $56.9 M





2017 CMP Allocations: $14.5 M



Funding values shown in chart are in millions

2017 MSIF & GMP

Mobile Source Incentive Fund
$9.06 M

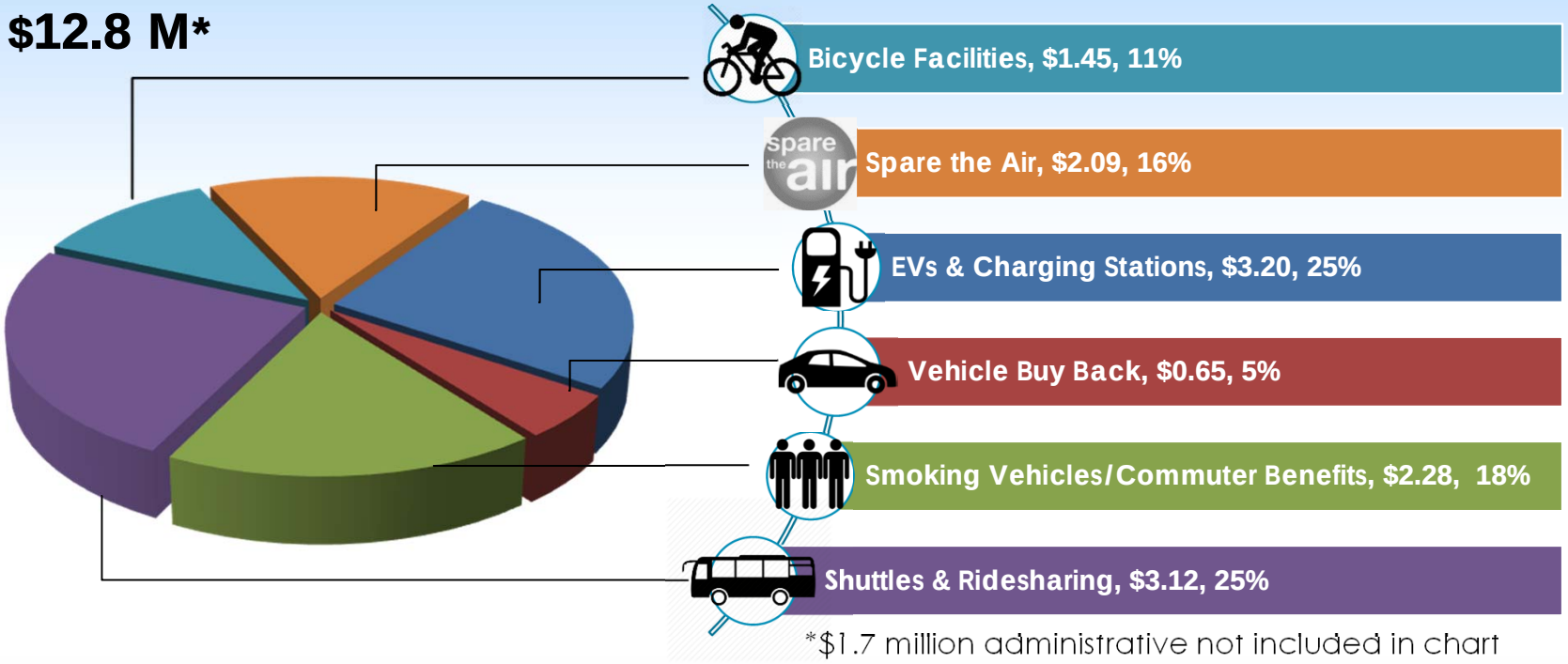
- Vehicle Buy Back Program: $4.6 M
- Lower Emission School Bus Program: $0.65 M
- Caltrain: $3 M (of $20 M award)

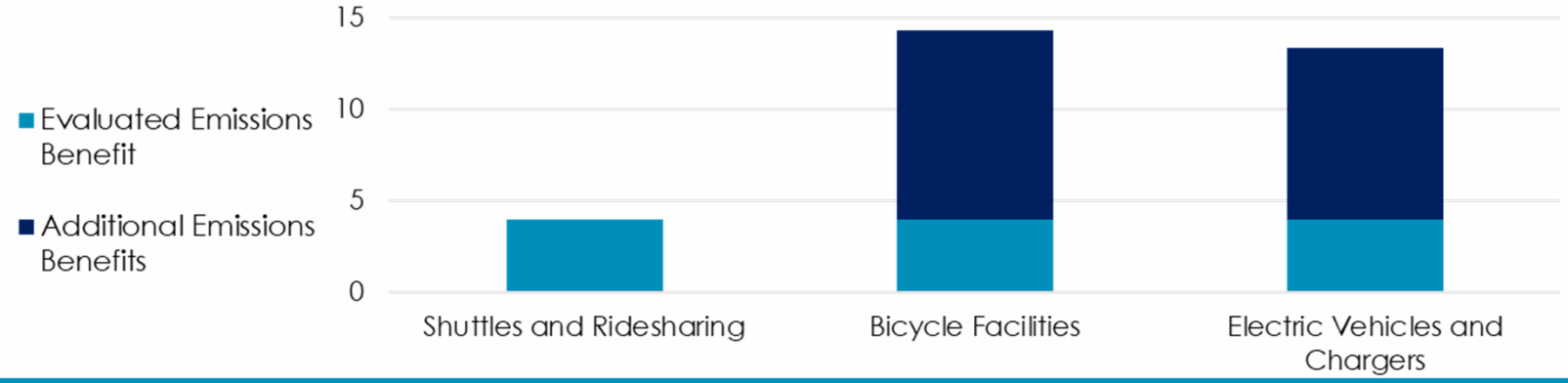
Goods Movement Program
$8.3 M

- Trucks: $8.3 M



2017 TFCA RF Awards & Effectiveness





2017 SID Highlights

- **~ $3.1 million for Charging Stations:** 27 projects installing ~800 Level 2 chargers, 10 DC fast chargers
- **$6 million for cleaner locomotives**
  - Two Tier 4 locomotives for ACE
  - One Tier 4 locomotive for OGRE (Oakland)
- **$1.5 million for Bicycle Facilities:**
  - > 35 miles of Class I, Class II, Class III, Class IV bikeways
  - 47 electronic lockers & 60 racks (425 parking spaces)
- **~$800,000 for Wood Smoke Reduction:** 368 replacement projects
- **Expanded vehicle buyback program and Carl Moyer Program**

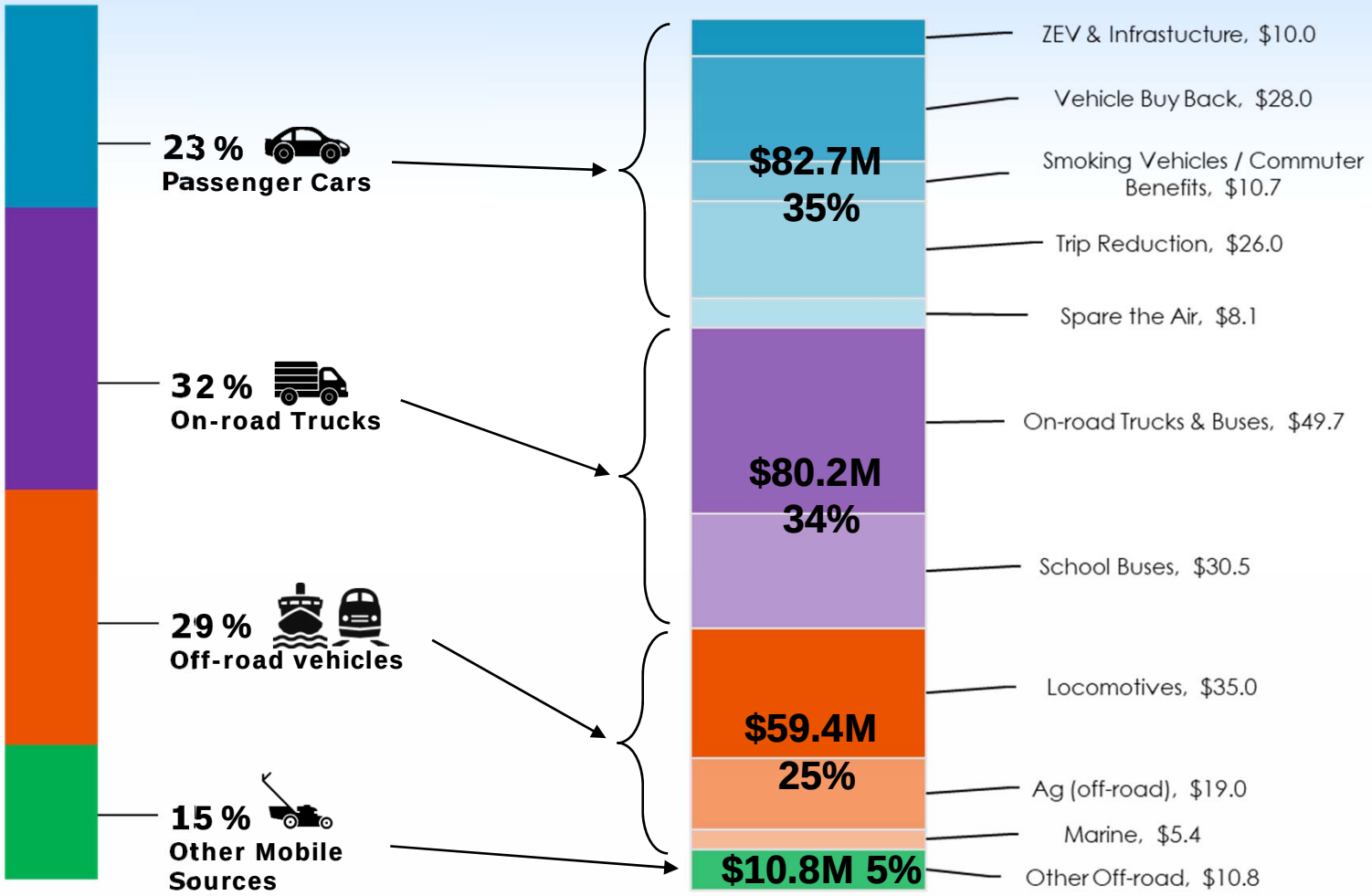



2017 Emissions Reductions

- **Tons per year (TPY) of emissions reduced by $45.6 M:**
  - Particulate Matter (PM) – 20 TPY
  - Nitrogen Oxides (NOx) – 360 TPY
  - Reactive Organic Gases (ROG) – 93 TPY
  - Carbon Dioxide (CO2)* – 20,830 TPY
- **More than $26 million to projects in CARE areas**

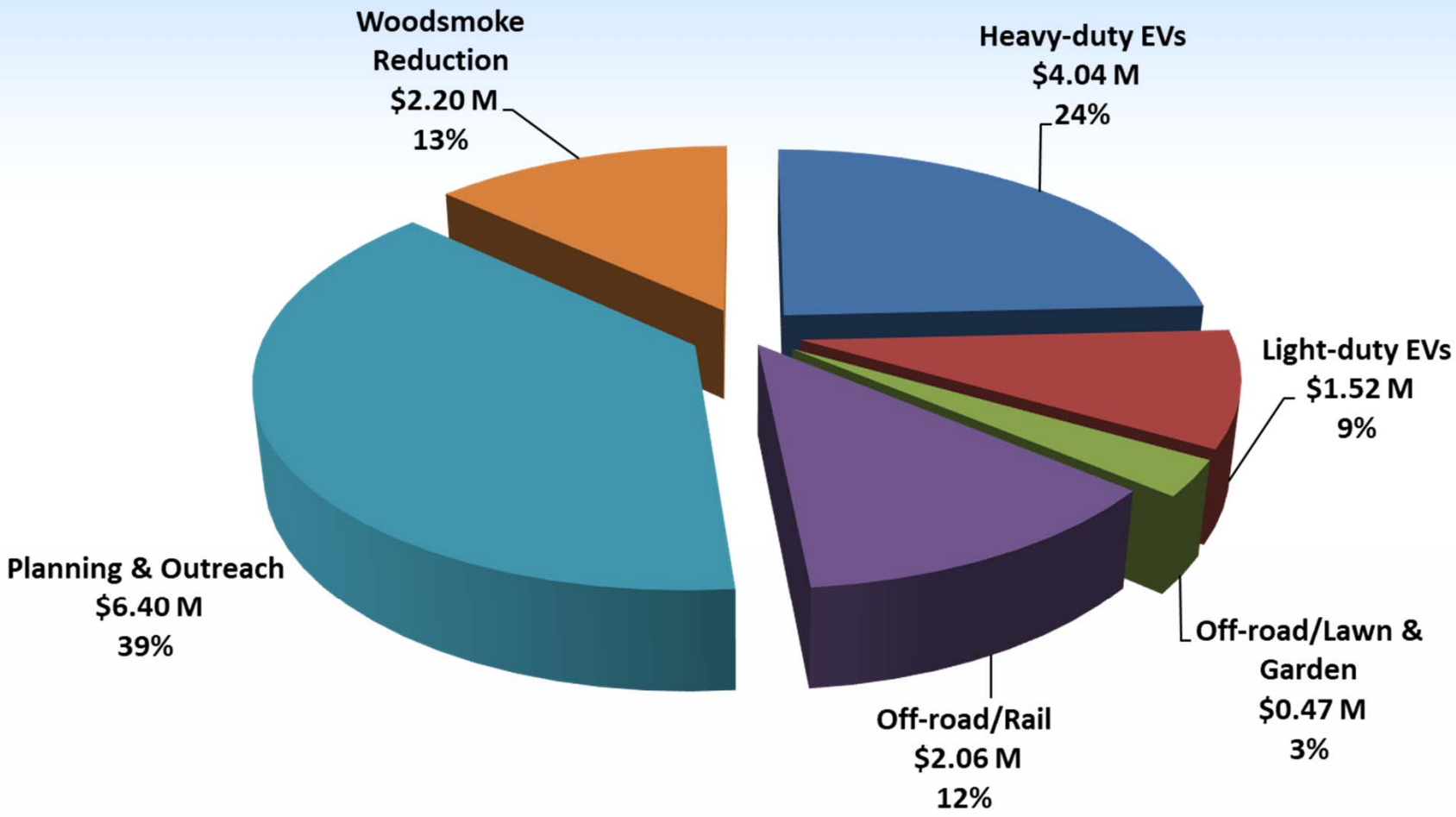
*Not all programs report CO_2 reductions

Relative Emissions from Mobile Sources and Funding Awarded by Category 2013-2017: $233M*

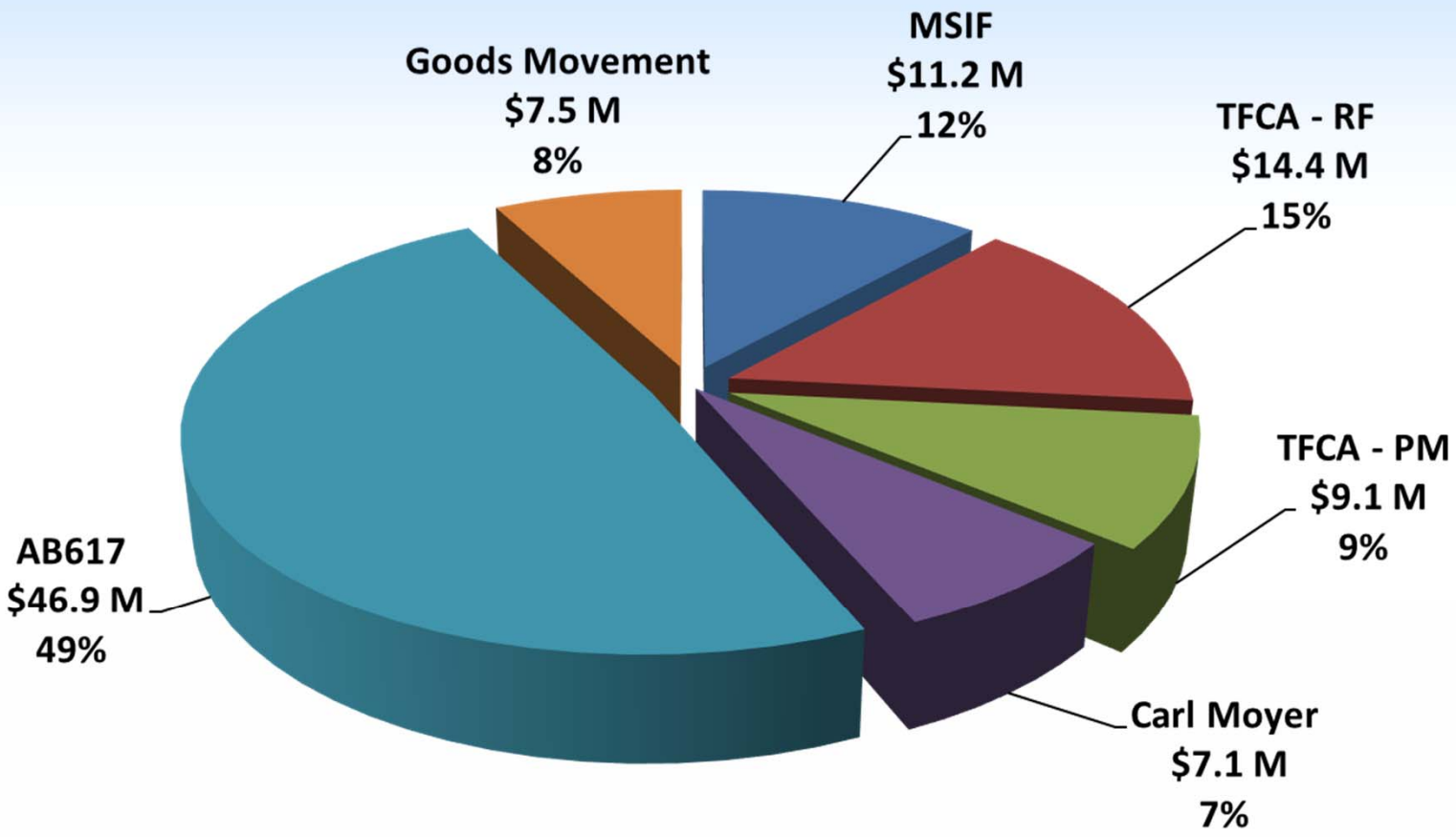


*$7.2 million administrative costs are not included in this chart

Other Funding (2013-2017): $16.7 M



2018 Funding Projection: ~$96 M*



*Approximately $10 million addional funding in other grants

2018 Grant Program Priorities

- AB 617 implementation to reduce local exposure and to improve community health
  - Community engagement
  - AB 134 funding
- Continued focus on impacted communities to reduce diesel PM
  - On-road trucks
  - Off-road & cargo handling equipment
  - Locomotives
  - Marine vessels
- Zero-emissions technologies
  - Cars, trucks, and buses
  - Trip reduction and innovative first- & last- mile solutions