



# **San Joaquin Valley Agricultural Equipment Incentive Measure (Valley Incentive Measure)**

Board Hearing: December 13, 2019

# Background

- CARB adopted Valley State SIP Strategy in October 2018
- Action by 2020 to achieve reductions from agricultural equipment
  - 2024 reductions: 11 tpd NO<sub>x</sub>; 0.8 tpd PM<sub>2.5</sub>
  - 2025 reductions: 10 tpd NO<sub>x</sub>; 0.8 tpd PM<sub>2.5</sub>
- Proposed measure builds on existing successful agricultural equipment replacement programs

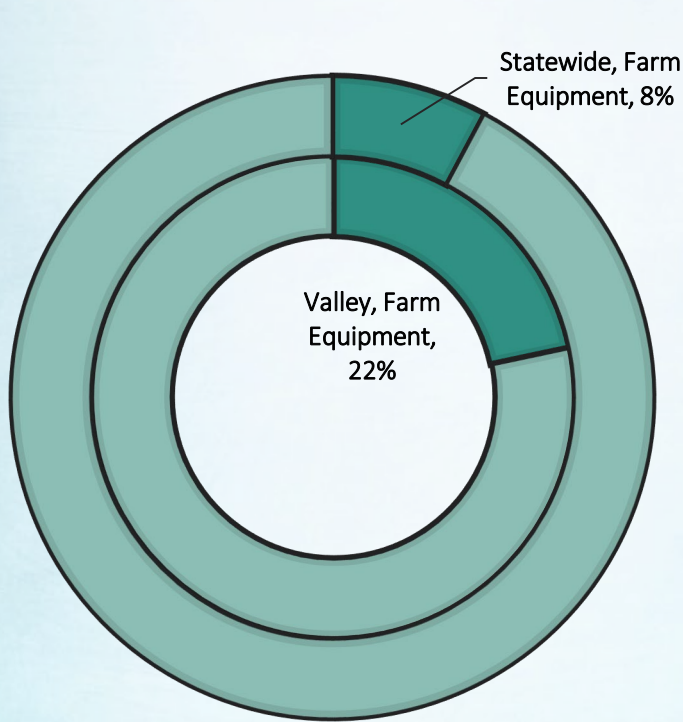


# Incentive Measure Purpose

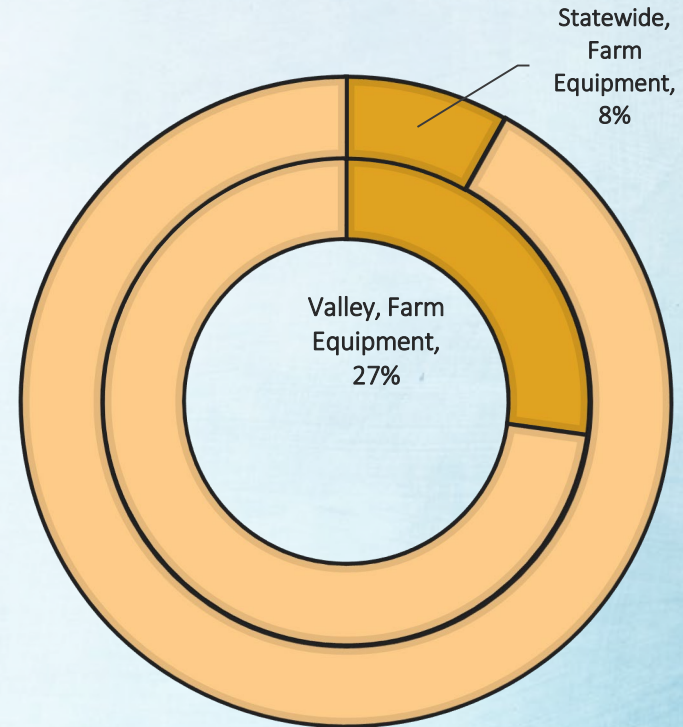
- Provides the legal mechanism to achieve SIP credit
- Quantifies SIP-creditable emissions reductions
  - Existing projects
  - Future projects based on identified funding
- Targets older, dirtier agricultural equipment for replacement with clean engines



# Agricultural Equipment Emissions Contribution

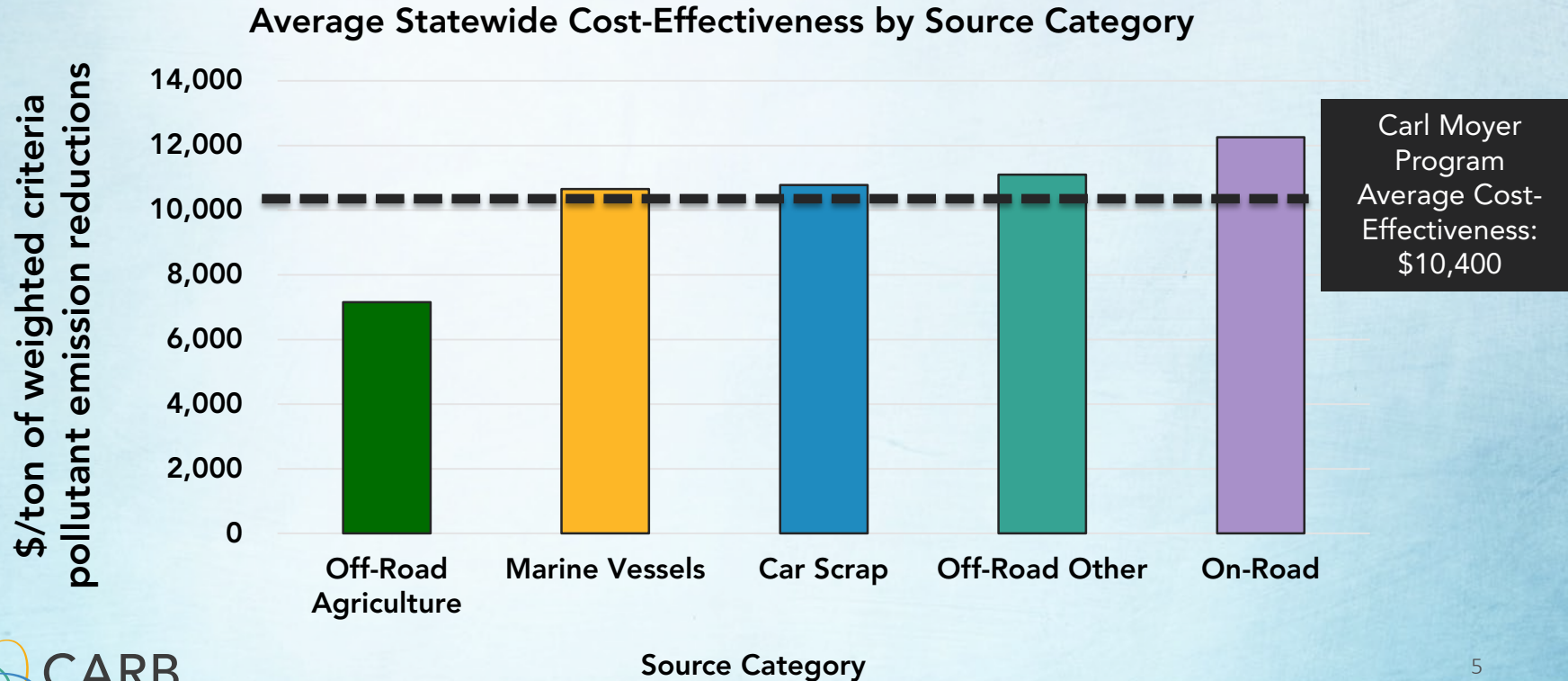


Mobile NOx Emissions



Mobile PM Emissions

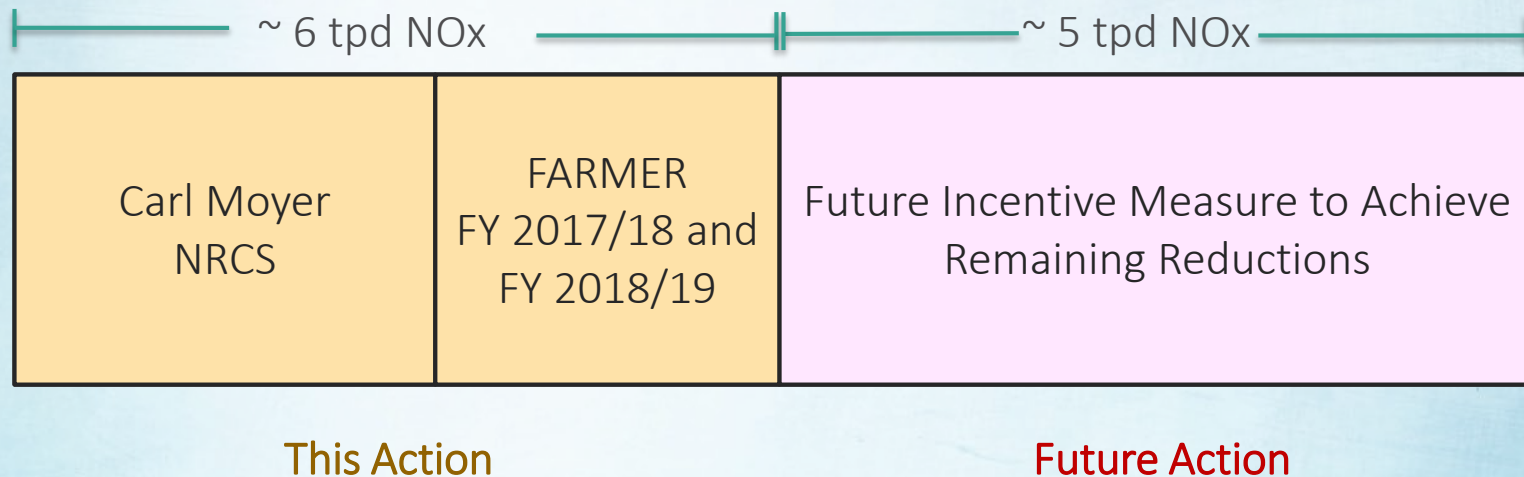
# Cost-Effectiveness of Carl Moyer Incentives



# Valley State SIP Strategy

Measures	Agency	Public Process Begins	Action	Implementation Begins
<b>2016 State SIP Strategy Measures</b>				
Advanced Clean Cars 2	CARB	2017	2020 – 2021	2026
Reduced ZEV Brake and Tire Wear				
Lower In-Use Emission Performance Level:	CARB	2016	2017 – 2020	2018 +
Lower Opacity Limits for Heavy-Duty Vehicles	CARB	2016	2018	2018 – 2024
Amended Warranty Requirements for Heavy-Duty Vehicles	CARB	2016	2018	2022
Heavy-Duty Vehicle Inspection and Maintenance Program	CARB	2019	2020	2022 +
Low-NOx Engine Standard – California Action	CARB	2016	2019	2023
Low-NOx Engine Standard – Federal Action	U.S. EPA	2016	2019	2024
Innovative Clean Transit	CARB	2015	2018 – 2019	2020
Advanced Clean Local Trucks (Last Mile Delivery)	CARB	2016	2019	2020
Zero-Emission Airport Shuttle Buses	CARB	2017	2018	2023
More Stringent National Locomotive Emission Standards	U.S. EPA	2017	2017	2023 +
Zero-Emission Off-Road Forklift Regulation Phase 1	CARB	2020	2020	2023
Zero-Emission Airport Ground Support Equipment	CARB	2018	2019	2023
Small Off-Road Engines	CARB	2016	2018 – 2020	2022
Transport Refrigeration Units Used for Cold Storage	CARB	2016	2018 – 2019	2020 +
Low-Emission Diesel Fuel Requirement	CARB	2019	2021	2023
<b>Proposed State Measures for the Valley</b>				
Accelerated Turnover of Trucks and Buses				
Incentive Projects	CARB / SJVAPCD	--	--	Ongoing
SIP-Creditable Measure*		2018	by 2021	
Accelerated Turnover of Agricultural Equipment				
Incentive Projects	CARB / SJVAPCD	--	--	Ongoing
SIP-Creditable Measure*		2018	by 2020	
Cleaner In-Use Agricultural Equipment	CARB	2019	2025	2030
Accelerated Turnover of Off-Road Equipment				
Incentive Projects	CARB / SJVAPCD	--	--	Ongoing
SIP-Creditable Measure*		2020	by 2021	

# Agricultural Emissions Reductions Progress





# Valley Incentive Measure

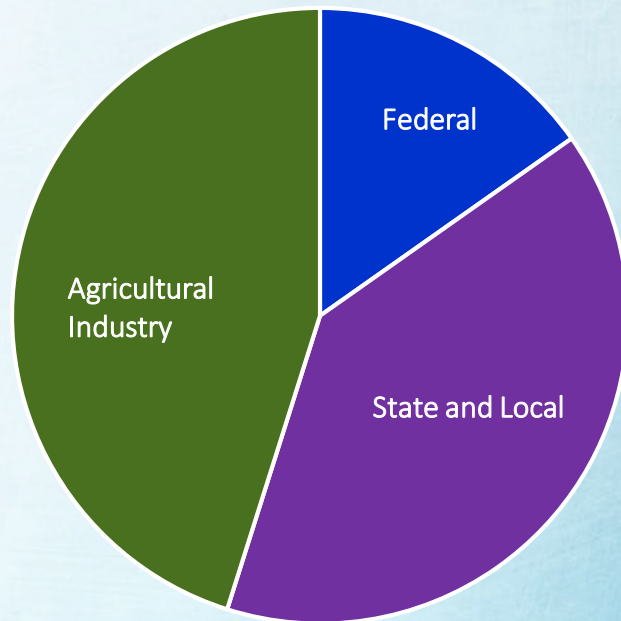
- Existing projects from Moyer and NRCS
- New projects from 17/18 and 18/19 FY FARMER funding
- CARB maintains dedicated webpage with annual reports and project information
- Transparent public information and data confirm reductions



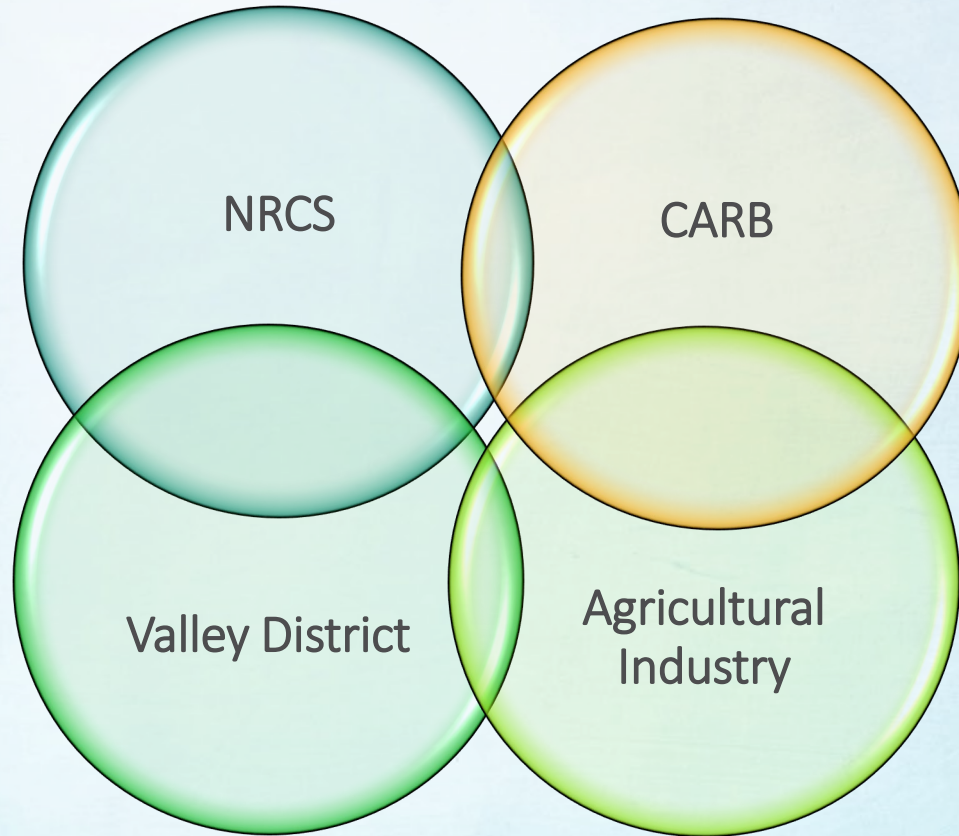
# Funding Cleaner Agricultural Equipment in the Valley

- 3,400 projects implemented since 2015
  - 3.7 tpd NOx reduction in 2024
- 55 percent funded by federal and State
  - \$236 million in federal, State and local investments
  - Matched with \$194 million from agricultural industry

**\$430 Million Implemented Funds by Funding Source (2015-2019)**

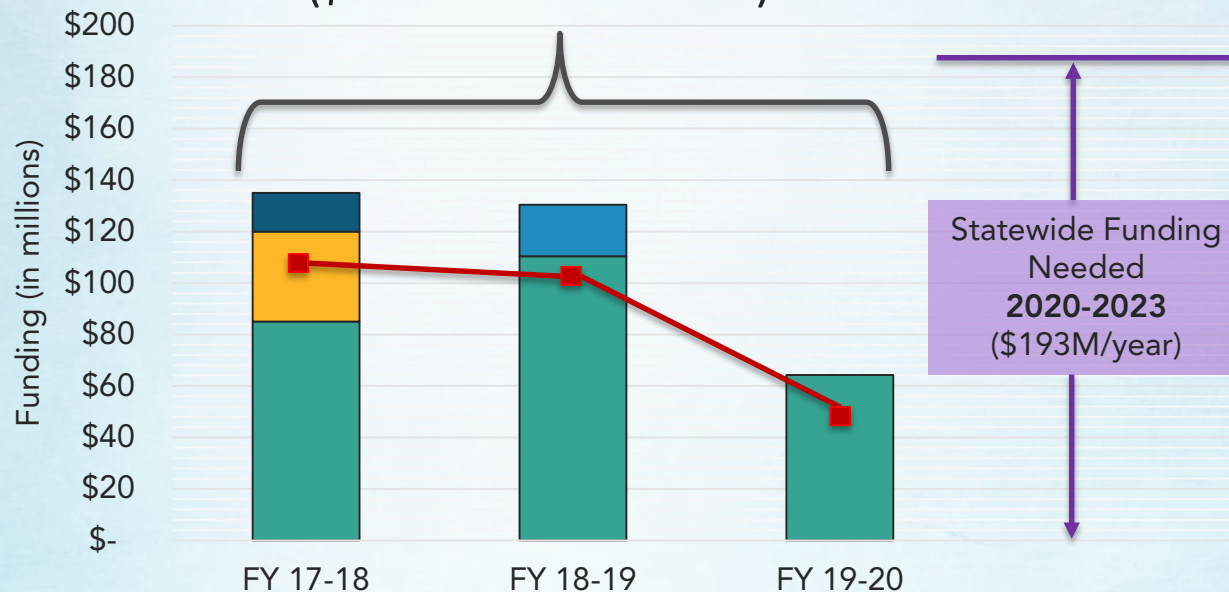


# Partnership is Key to Program Success



# FARMER Program

(\$332 Million Statewide)



- California Tire Recycling Management Fund
- Air Quality Improvement Fund
- Alternative and Renewable Fuel and Vehicle Technology Fund
- Greenhouse Gas Reduction Fund
- Valley Allocation

10,600 tons  
NOx Emissions  
Reduced

680 tons  
PM 2.5 Emissions  
Reduced



# U.S. EPA SIP Credit Integrity Elements

**Surplus**

**Quantifiable**

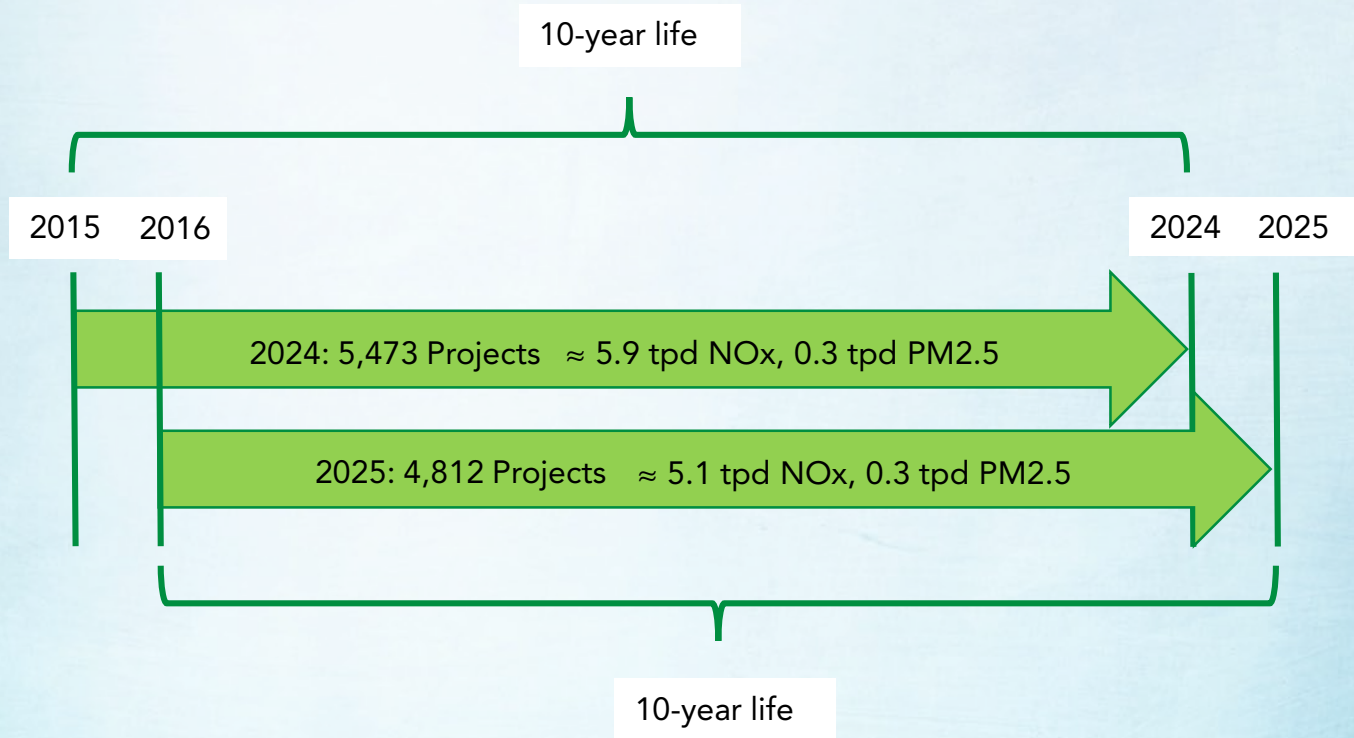
**Permanent**

**Enforceable**

# Enforceable Implementation Reporting Mechanism

- Ensures the public can enforce the emissions reductions
- Requires tracking to:
  - Document the number of projects and emission reductions
  - Monitor, assess, and report on reductions achieved
  - Adopt and submit substitute measures to remedy any shortfall
- Identifies CARB as responsible agency
- Ensures public access to data

# Two Emission Reduction Targets





# SIP-Creditable Emissions Reductions

Valley Incentive Measure		
Attainment Year	2024	2025
NOx Reductions (tpd)	5.9	5.1
PM2.5 Reductions (tpd)	0.3	0.3

# Looking Forward

## Continued Funding is Crucial

- Working diligently to achieve the reductions
- Half way there with identified funding
- Valley has a waiting list for projects to fund
- Need \$193 million per year of funding



# Staff Recommendations

- Adopt the Valley Incentive Measure including the Enforceable Implementation Reporting Mechanism as a revision to the California SIP
- Direct the Executive Officer to submit the Valley Incentive Measure to U.S. EPA



**Thank you!**