

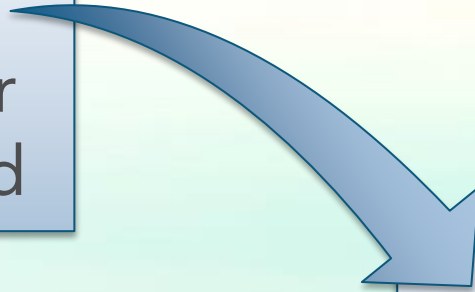


Valley PM_{2.5} Implementation Update and SIP Amendment

September 23, 2021

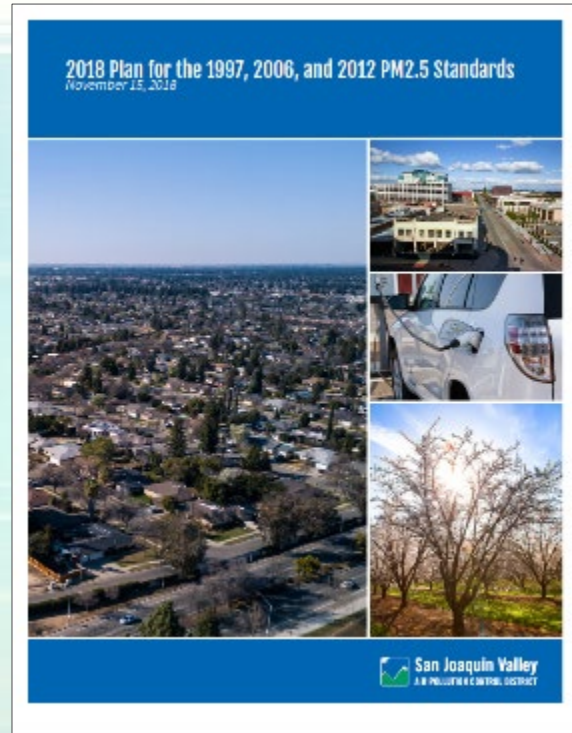
Today's Item

1. Board action
on SIP revision for
 $15 \mu\text{g}/\text{m}^3$ standard



2. Update on
progress towards
meeting $12 \mu\text{g}/\text{m}^3$
standard

San Joaquin Valley 2018 PM2.5 SIP



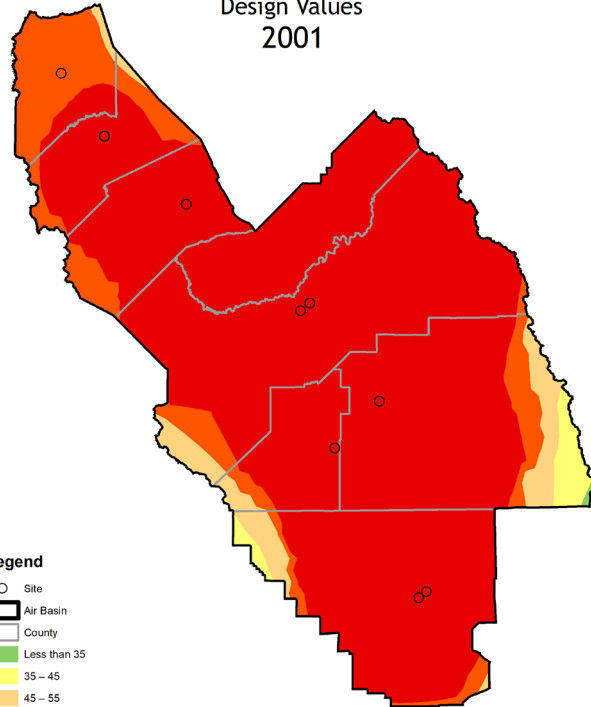
- Comprehensive strategy to address four PM2.5 standards in the Valley
- Joint CARB and District strategy
- Adopted January 2019
- Commitments for emissions reductions in 2024 and 2025

SIP Addresses Four PM2.5 Standards

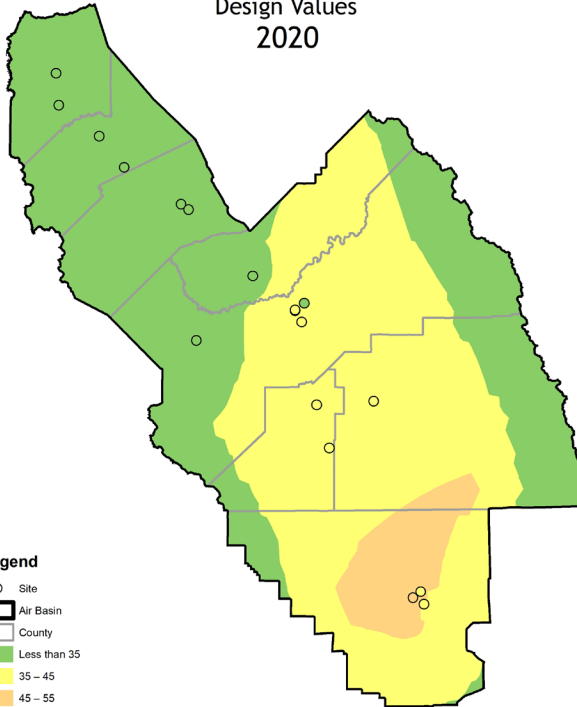


Valley Meets $65 \mu\text{g}/\text{m}^3$ 24-Hour Standard

National
24-Hr PM_{2.5}
Design Values
2001



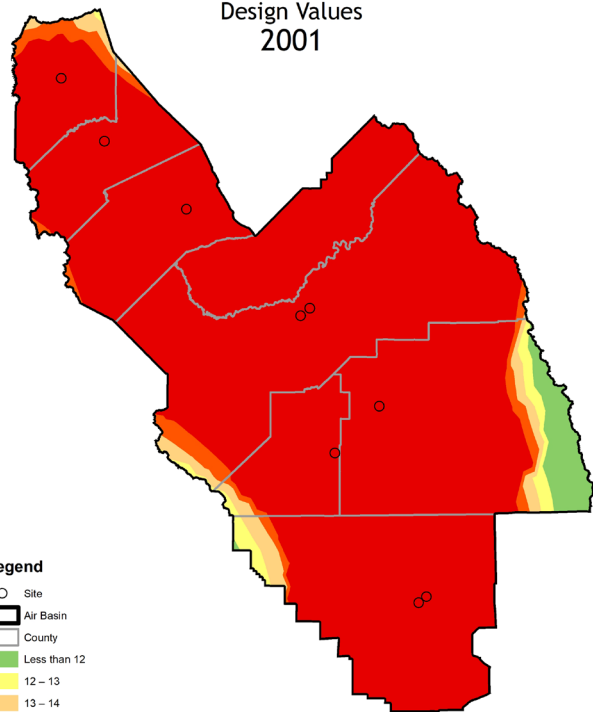
National
24-Hr PM_{2.5}
Design Values
2020



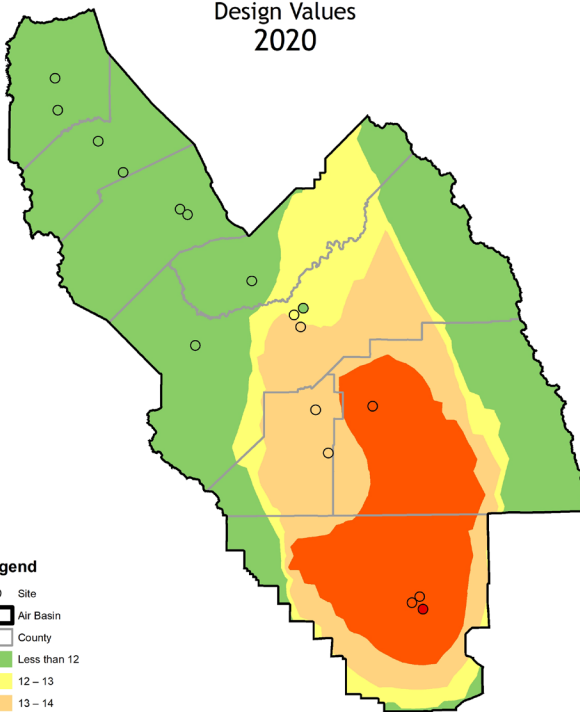
- 2020 Design Value: $48 \mu\text{g}/\text{m}^3$ (Bakersfield), accounting for wildfire impacts
- 8 sites already below $35 \mu\text{g}/\text{m}^3$

Progress Towards Annual Standards, More Actions Needed

National
Annual PM_{2.5}
Design Values
2001

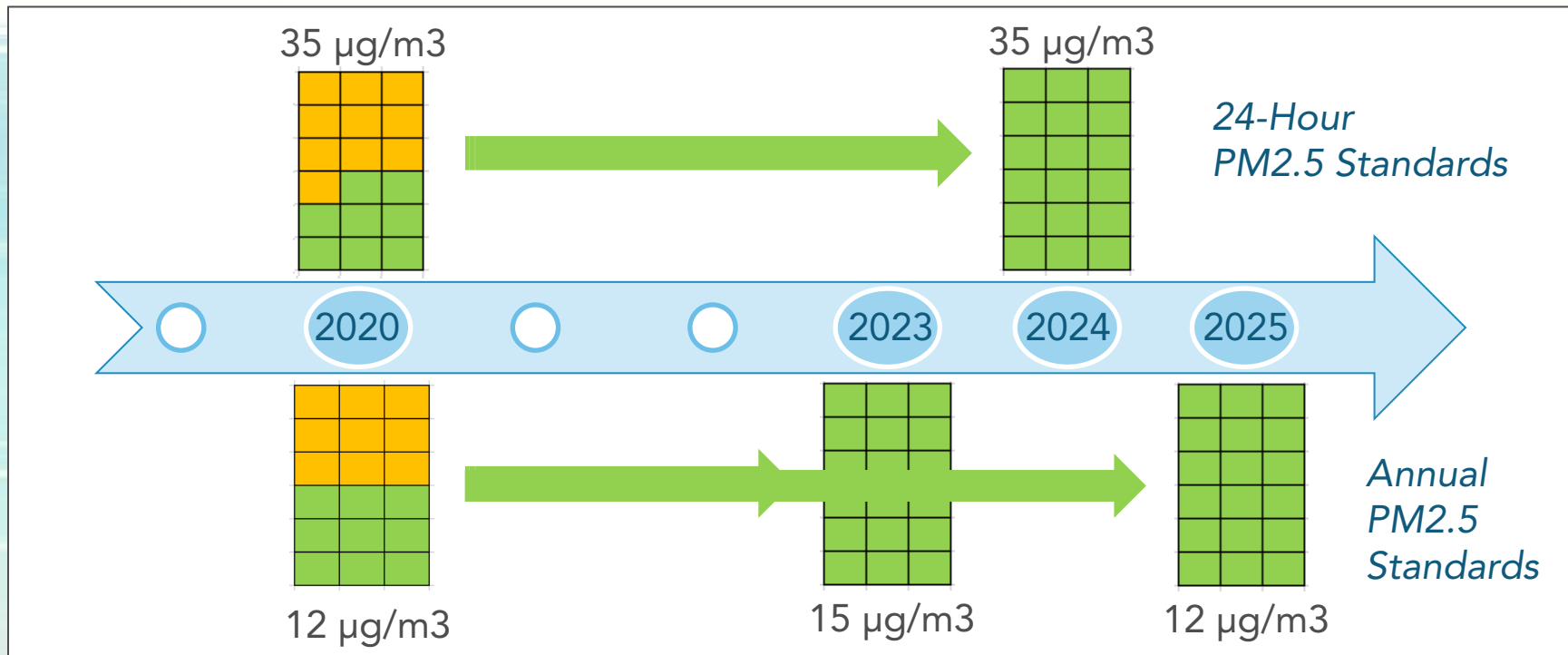


National
Annual PM_{2.5}
Design Values
2020



- All sites except Bakersfield (15.4 µg/m³) met 15 µg/m³ standard in 2020, accounting for wildfire impacts
- 9 sites already below 12 µg/m³

Site-Level Progress Towards Attainment



Key Actions Underway

Agricultural Equipment Turnover

- Provides ongoing emissions reductions
 - 14,000 tractors and equipment replaced through District and NRCS incentive programs
 - Significant funding available: \$212.6 million statewide in State 2021-22 Budget for FARMER
- **2025 Commitment: 11 tpd NOx, 0.8 tpd PM2.5**
2025 Expected: 11 tpd NOx, 0.8 tpd PM2.5



Residential Wood Burning Strategy

- District Rule 4901 amendments in 2019 included more stringent residential wood burning requirements Valley-wide, established lower curtailment levels in hot-spot counties
- Burn Cleaner Incentive Program provides ongoing emissions reductions
- 24,000 devices replaced to date
- **2025 Commitment: 0.42 tpd PM2.5**
2025 Expected: 0.42 tpd PM2.5



Agricultural Burning Phase-Out

- Near-complete phase-out of burning 2021-2025 (District Rule 4103)
- Achieving additional cost-effective, near-term reductions
- Pilot program addressed 49,000 acres, 1.3 million tons of material



Orchard grinding in Stanislaus Co.
(Brent Holtz/UCANR)

➤ **2025 Commitment: 0 tpd NO_x, 0 tpd PM_{2.5}**
2025 Expected: 1.41 tpd NO_x, 2.01 tpd PM_{2.5}

Significant Funding for Phase-Out

- \$180 million in State 2021-22 Budget for alternatives to agricultural burning
- CARB and District executed new grant for enhanced incentive program, launched September 1
- District conducting outreach to Valley agricultural operations



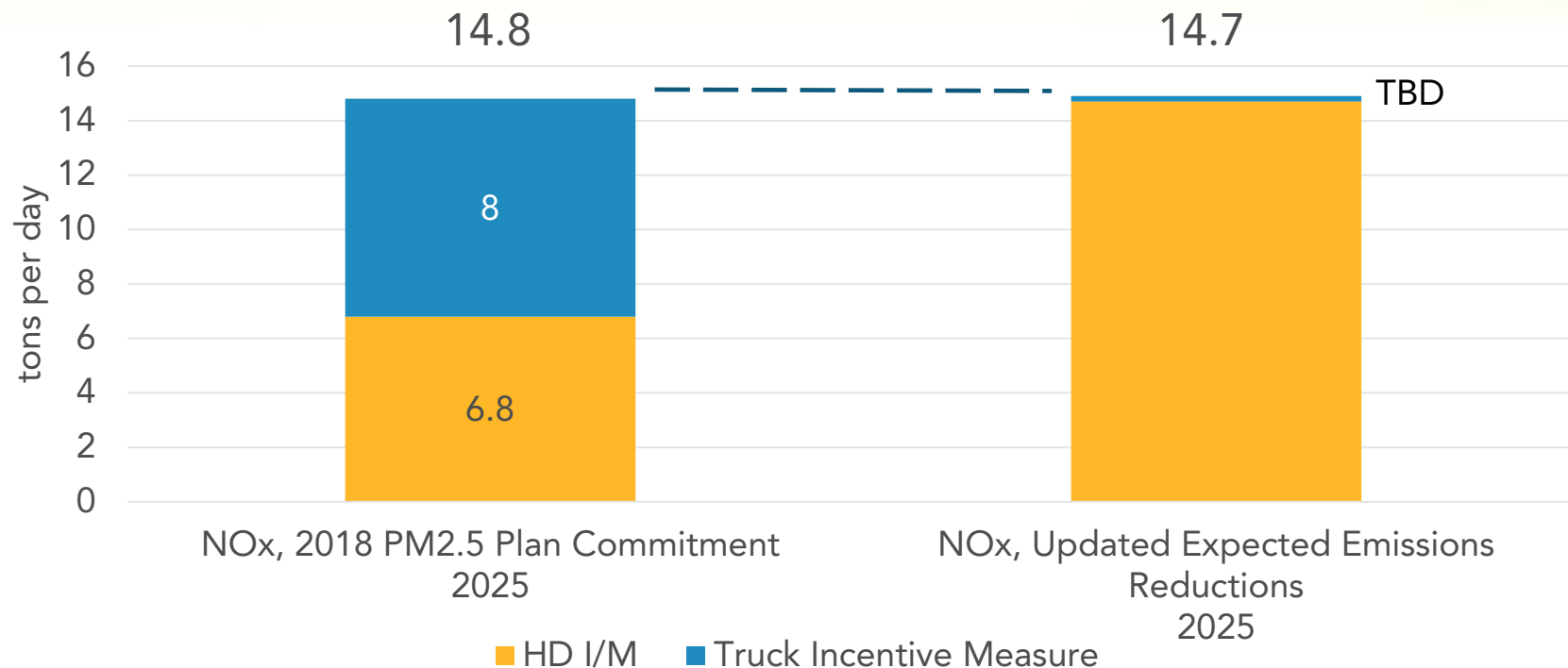
Truck Measures in the Valley

- Incentives are funding significant truck turnover in the Valley, but many reductions do not meet EPA SIP-credit factors.
 - **2025 Commitment: 8 tpd NOx**
2025 Expected: TBD*
- Heavy-Duty Inspection and Maintenance (HD I/M) Program regulation: December 2021
 - Reductions beginning in 2023
 - Periodic roadside testing via PEAQS: 4+ units
 - **2025 Commitment: 6.8 tpd NOx**
2025 Expected: 14.7 tpd NOx

*Less than 0.1 tpd NOx to date



Truck Emissions Reductions



New Locomotive Measure

- Replace old diesel locomotives with cleaner ones to reduce criteria, toxics, and GHG emissions
- In-use measure to limit idling
- **2025 Commitment: 0 tpd NO_x**
2025 Expected: 1.14 tpd NO_x



Pursuing Additional Reductions

- 2022 State SIP Strategy may provide additional benefits
- New mobile source measures may provide additional near-term benefits for the Valley
- Will build on 2020 Mobile Source Strategy

Board Consideration of 15 $\mu\text{g}/\text{m}^3$ Standard Plan Revision

2023 Attainment for 15 $\mu\text{g}/\text{m}^3$ Standard

- EPA proposed partial disapproval on July 22, 2021
- Public process: District workshop, hearing, review of District and CARB reports; District adopted August 2021
- Considerable progress: only 1 of 18 sites exceeds the standard
- SIP Revision and Staff Report address Clean Air Act requirements, including attainment demonstration for 2023, except contingency
- Adopted and upcoming measures provide clear path for attainment
- Time is of the essence: provide SIP Revision to EPA to avoid consequences

2023 Commitment for HD I/M

Measure	Achieves Emissions Reductions 2023+	Adopted by CARB/District	Commitment Needed
Agricultural Equipment Turnover	✓	✓	No
Residential Wood Burning Strategy	✓	✓	No
Agricultural Burning Phase-Out	✓	✓	No
HD I/M	✓	Dec. 2021	Yes

New CARB aggregate commitment for 2023:
3.0 tpd NO_x and 0.04 tpd PM_{2.5}

Need for Quick Action

- EPA final disapproval will trigger transportation conformity freeze
 - Valley Metropolitan Planning Organizations cannot amend Transportation Improvement Programs or update Regional Transportation Plans due Summer 2022
 - Could also lose Federal Statewide Transportation Improvement Program funds
- Prompt SIP submittal and EPA adequacy determination resolves the conformity freeze
- Revisions provide clear path for attainment with 15 $\mu\text{g}/\text{m}^3$ standard

15 $\mu\text{g}/\text{m}^3$ SIP Revision Timeline

Q1 '21

- SJV/CARB/EPA determined Valley did not meet 15 $\mu\text{g}/\text{m}^3$ standard
- EPA indicated it intended to disapprove

Q2 '21

- SJV/CARB/EPA began working on SIP Revision

Q3 '21

- EPA published proposal to disapprove
- District held workshop, adopted SIP Revision; CARB consideration

Q4 '21

- EPA final disapproval anticipated

Q1 '22

- Transportation conformity freeze occurs
- EPA may determine budgets are adequate for conformity purposes

Q3 '22

- MPOs adopt new RTPs/FTIPs and make conformity determination

Q4 '22

- MPOs submit RTPs/FTIPs to FHWA/FTA for approval of conformity determination

Progress Towards 12 $\mu\text{g}/\text{m}^3$ Standard

Aggregate Commitment Provides Flexibility for 2025 Attainment

- Measures evolve during rulemaking process
- Some SIP measures projected to achieve more or less than expected reductions

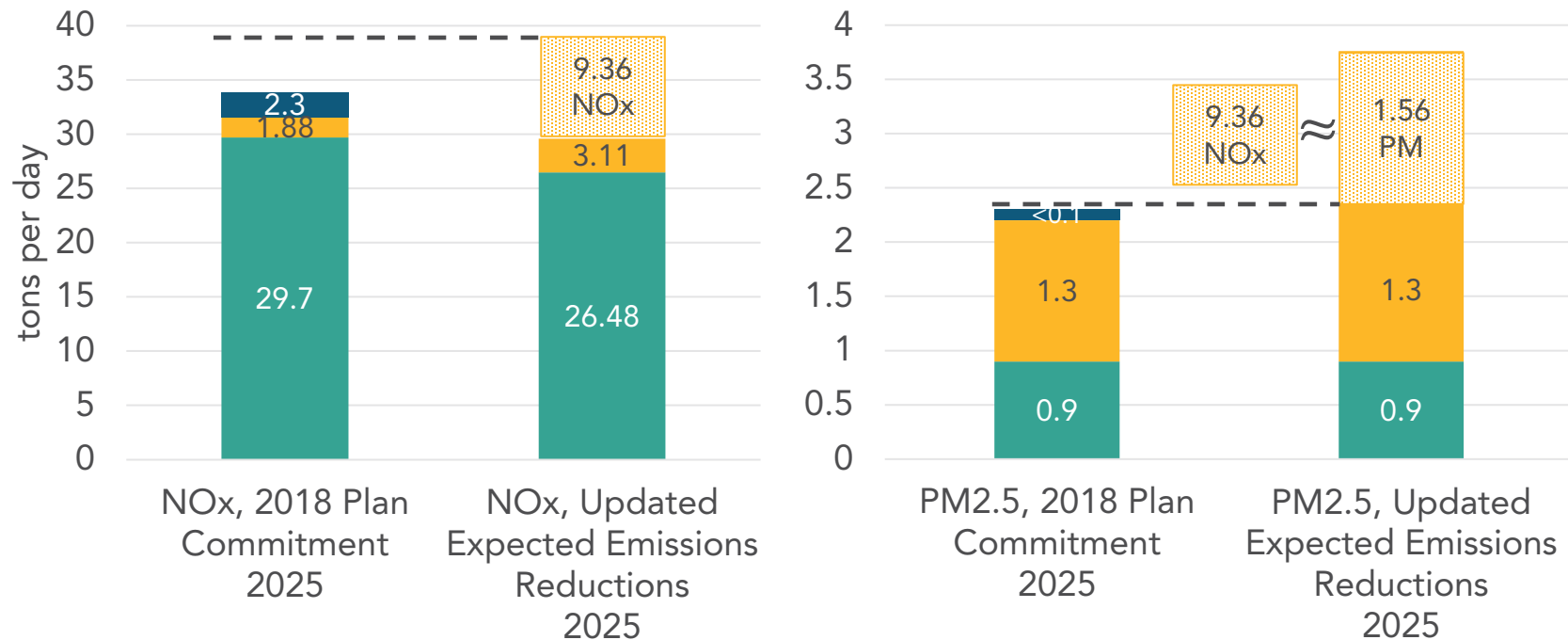
Current Status of SIP Measures

CARB Measure	Status	12 ug annual standard: 2025			
		2018 PM2.5 Plan Commitment (tpd)		Updated Expected Reductions (tpd)	
		NOx Reductions 2025	PM2.5 Reductions 2025	NOx Reductions 2025	PM2.5 Reductions 2025
Advanced Clean Cars 2 (Reduced ZEV Brake and Tire Wear)	2022	.	.	N/A	N/A
Lower In-Use Emission Performance Level: Lower Opacity Limits for HD Vehicles	Adopted			0	0.02
Lower In-Use Emission Performance Level: HD Vehicle Inspection and Maintenance Program	2021	6.8	< 0.1	14.7	0.03
Lower In-Use Emission Performance Level: Amended Warranty Requirements for HD Vehicles	Adopted			0.34	<<0.01
Low-Nox Engine Standard - California Action (Adopted as HD Low-NOx Omnibus)	Adopted	2	.		
Advanced Clean Local Trucks (Last Mile Delivery) (Adopted as Advanced Clean Trucks)	Adopted	<0.1	<0.1	0.08	<<0.01
Low-NOx Engine Standard - Federal Action	Petition Sent	2	.	0	0
Innovative Clean Transit	Adopted	<0.1	<0.1	0.017	<<0.01
Zero-Emission Airport Shuttle Buses	Adopted	.	.	<<0.01	<<0.01
More Stringent National Locomotive Emission Standards	Petition Sent	0.3	<0.1	0	0
Zero-Emission Off-Road Forklift Regulation Phase 1	2022	.	.	0.02	<<0.01
Zero-Emission Airport Ground Support Equipment	Ongoing	<0.1	<0.1	N/A	N/A
Small Off-Road Engines	2021	0.2	<0.1	0.155	0.007
Transport Refrigeration Units	2021	.	.	0.04	0.01
Low-Emission Diesel Fuel Requirement	2022	1	0.1	N/A	N/A
Accelerated Turnover of Trucks and Buses	Ongoing	8	.	TBD	N/A
Accelerated Turnover of Agricultural Equipment Phase 1	Adopted	5.9	0.3	5.9	0.3
Accelerated Turnover of Agricultural Equipment Phase 2	2025	4.1	0.5	4.1	0.5
Cleaner In-Use Agricultural Equipment	2025	.	.	N/A	N/A
Accelerated Turnover of Off-Road Equipment	Ongoing	1.5	.	N/A	N/A
Locomotive Measure				1.14	0.03
Total		32	0.9	26.5	0.9

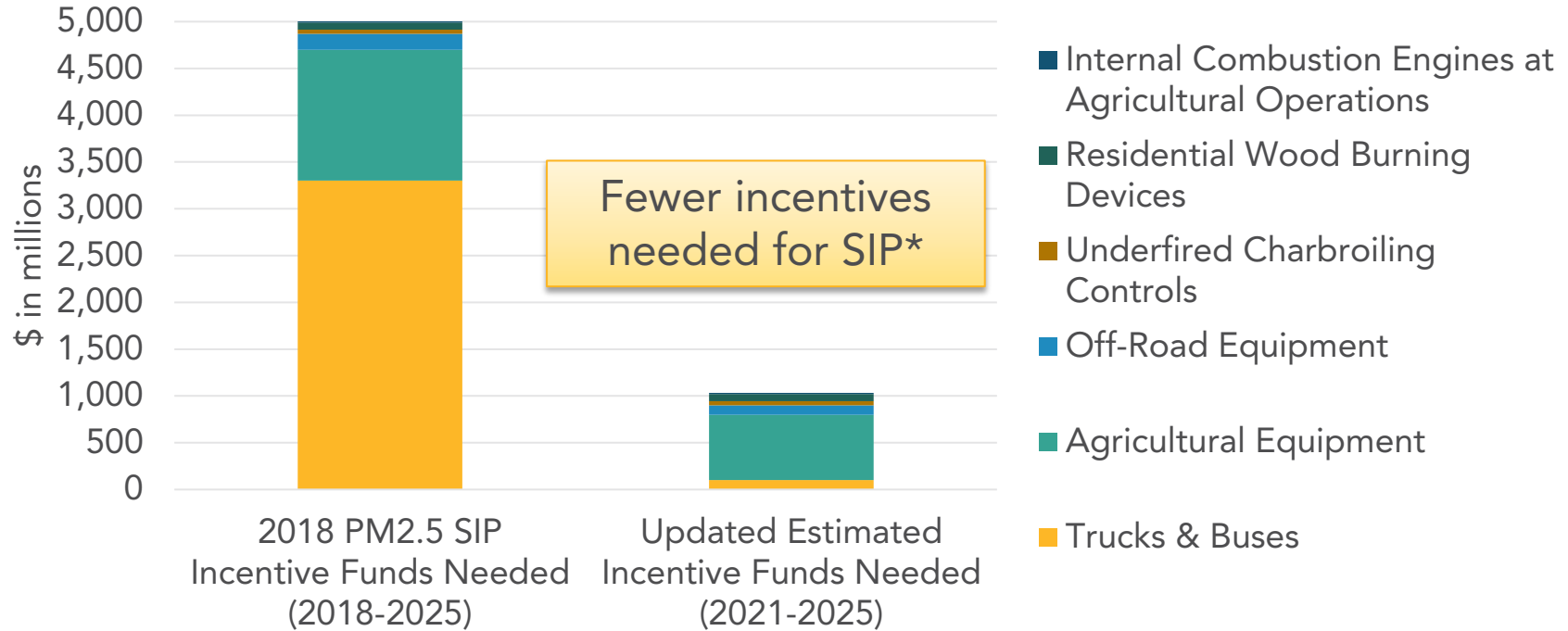
District Measure	Status	12 ug annual standard: 2025			
		2018 PM2.5 Plan Commitment (tpd)		Updated Expected Reductions (tpd)	
		NOx Reductions 2025	PM2.5 Reductions 2025	NOx Reductions 2025	PM2.5 Reductions 2025
Rule 4311 Flares	Adopted	0.05	0	0.19	0.03
Rule 4306 Boilers, Steam Generators, and Process Heaters - Phase 3	Adopted	1.83	0.03	0.19	0
Rule 4320 Advanced Emission Reduction Options for B., S.G., and P.H. > 5.0 MMBtu/hr					
Rule 4702 Internal Combustion Engines					
Rule 4354 Glass Melting Furnaces					
Rule 4352 Solid Fuel-Fired B., S.G., and P.H.	2021			0.62	0
Rule 4550 Conservation Management Practices	2022	0	0.32	0	0.32
Rule 4692 Commercial Underfired Charbroiling (Hot-Spot Strategy)	2020	0	0.53	0	TBD
Rule 4901 Wood Burning Fireplaces and Wood Burning Heaters (Hot-Spot Strategy)	Rule 4901 Incentive Measure	0	0.42	0	0.20
				0	0.22
Rule 4103 Update to Agricultural Burning	Adopted	0	0	1.41	2.01
Total		1.88	1.30	3.11	2.86

With some measures under/over commitment, will still meet 2025 aggregate commitment

Meeting the Aggregate Commitment



Less Reliance on Incentive Funds for SIP



*Additional truck incentive funds needed to reduce community exposure

Comments Received

CVAQ letter with concerns related to:

1. Updated modeling
2. Contingency measures
3. Precursor analysis (NO_x from soils, ammonia)
4. Stationary sources

Staff Responses

1. Current plan shows path to attainment; CARB continuously improves emissions inventories; need to focus on implementation
2. CARB and District agree contingency measure is needed, will develop in 2022; discussions with EPA ongoing about approvability of possible measures
3. NO_x is controlled in the SIP; CARB addressed ammonia in Staff Report, as well as Nov. 2017 Board hearing, Dec. 2020 Board memo, technical documents to EPA, and stakeholder meetings

Added Focus on Stationary Sources

- CARB working with districts to develop online Q&A document to enhance clarity on BARCT statewide
- Convene CAPCOA and stakeholders to assess NSR implementation per Board Resolution 20-11
- Enhance inspections of stationary sources statewide in collaboration with districts

Staff Recommendations and Next Steps

- Adopt SIP Revision for 15 $\mu\text{g}/\text{m}^3$ annual standard per requirements of Clean Air Act and direct Executive Officer to submit to EPA for inclusion in California SIP
- Maximize near-term emissions reductions from CARB's current regulatory calendar
- Continue to implement agricultural burning phase-out
- Work with districts and stakeholders to evaluate stationary source programs
- Regular reports back to the Board on status