

Air Quality Challenges and Solutions in the San Joaquin Valley

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**Chay Thao, Program Manager
Aaron Tarango, Grant Program Supervisor**



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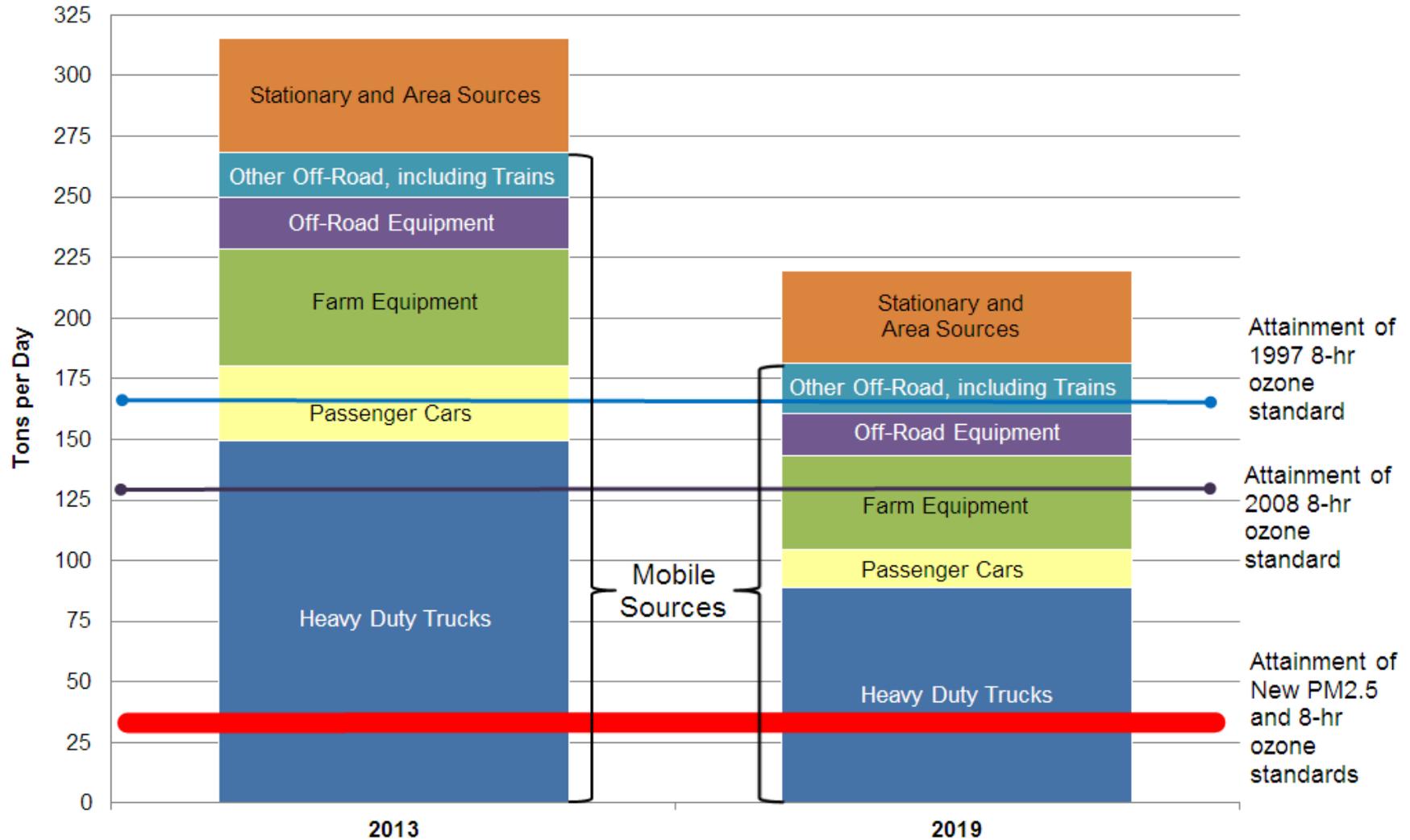
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Overview

- Valley at a critical juncture in meeting federal Clean Air Act mandates
- New federal air quality standards approach background concentrations
- Meeting the new standards requires enormous reductions in emissions
- Valley may have no viable option in avoiding costly federal sanctions and Federal Implementation Plan



San Joaquin Valley NOx Emissions



We Have Left No Stone Unturned

- ✓ Toughest air regulations on businesses and industries large and small
- ✓ Toughest air regulations on farms and dairies
- ✓ \$40 billion spent by businesses on clean air
- ✓ Over \$1 billion dollars of public/private investment on incentive-based reductions
- ✓ Toughest regulations on cars and trucks
- ✓ Toughest regulations on consumer products and what people can do inside their homes
- ✓ Reduced emissions by over 80% - *but need another 90% reduction to meet new standards*



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The Conundrum We Face

- District may have no other option to reach attainment
 - Shutting down all stationary sources not sufficient to reach attainment of federal standards
 - Shutting down all agriculture not sufficient to reach attainment of federal standards
 - Eliminating all passenger vehicle use not sufficient to reach attainment of federal standards
 - Eliminating all heavy duty trucks not sufficient to reach attainment of federal standards
- If cannot show attainment, plans will surely be unapprovable by EPA
- Can lead to costly federal sanctions (includes loss of highway funds)



EPA Inaction on 2015 PM2.5 Plan

- EPA failed to act by the July 1st deadline after having the Plan for over a year
- EPA inaction sets attainment deadline at December 2015, which has already passed
- EPA inaction unexplainable
 - District worked closely with EPA for over a year before submittal to address concerns/requirements
 - EPA formally proposed approval of plan in January 2016
 - EPA did not provide explanation for inaction other than citing comments received by single commenter
 - Nothing new in the comments received
 - EPA did not give District advance notice to address any perceived deficiency (even though EPA had comment letter since March 2016)



PM2.5 Deadlines and Mandates

- 1997 Standard 24-hr ($65 \mu\text{g}/\text{m}^3$) and annual ($15 \mu\text{g}/\text{m}^3$)
 - District misled into thinking attainment deadline would be extended to 2020
 - Serious Attainment Deadline: 2015
 - 5% Plan due December 31, 2016 (not enough time to develop)
- 2006 Standard 24-hr ($35 \mu\text{g}/\text{m}^3$)
 - Serious Attainment Deadline: 2019 – plan due August 2017
 - Attainment by deadline appears impossible at this time
 - Attainment demonstration requires clean data finding for 3 consecutive years 2017-2019 (must reach attainment by 2017)
 - Physically impossible given ARB truck/bus and off-road engine regulations not fully implemented until 2023
 - 5 year extension available; unlikely with EPA's recent inaction

PM2.5 Deadlines and Mandates (cont'd)

- 2012 Standard annual ($12 \mu\text{g}/\text{m}^3$)
 - Moderate Attainment Deadline: 2021
 - Plan due October 2016
 - District is allowed to bump up to Serious classification with attainment deadline of 2025
 - Requires attainment impracticability demonstration
 - Must continue to meet Moderate classification requirements
 - Serious Plan due 4 years after EPA reclassification
 - 5 year extension to 2030 available; unlikely with EPA's recent inaction
 - Attaining standard by 2030 is highly unlikely even if EPA granted a five-year extension (need zero/near-zero emissions technology across all sources)



Attainment Impossible Without Enormous Mobile Source Reductions

- San Joaquin Valley Air District's Governing Board adopted guiding principles in August 2016 to address federal PM2.5 mandates
- Attainment not possible without enormous reductions in mobile source emissions under federal jurisdiction
 - Incentive-based measures must be included in plan
 - EPA must accept responsibility (financial, regulatory) for sources under their jurisdiction
 - Securing additional state funding is essential
 - District will provide funding from local sources
- District and other stakeholders including SCAQMD need time to pursue all avenues including legislation aimed at securing necessary federal funding
- EPA needs time to take action on District's petition requesting tailpipe standards for trucks and locomotives
 - Pursue other remedies to compel EPA to do so



District Partnership with NRCS, ARB, & EPA

- 2010 MOU (EPA, ARB, NRCS & the District) set stage to receive creditable emission reductions from voluntary incentive programs
- District Rule 9610 provides mechanism to receive creditable emission reductions (1st of its kind in the nation)
- Creditable reductions very important because District's 2007 SIP commitment required 5-10 tpd of NO_x from mobile ag equipment (Ag Tractors) by 2017
- 2016 Annual Demonstration Report for District Rule 9610 recently submitted in August 2016 to EPA
 - Currently 12.49 tpd of NO_x creditable emission reductions achieved



Ag Tractor Funding

- District
 - Started funding in 2009
 - Total project cost (\$246 million)
 - District invested (\$105 million)
 - Farmers cost-share (\$141 million)
 - 4.42 tpd NOx emissions reduced
 - District providing \$25 million annually into the program
- NRCS
 - Started funding in 2009
 - Total project cost (\$176 million)
 - NRCS invested (\$100 million)
 - Farmers cost-share (\$76 million)
 - 8.08 tpd NOx emissions reduced
 - NRCS providing \$17 million annually into the program

Ag Programs

- Ag Pump Replacement
 - 3,900 Diesel to Diesel (\$57.5m – 29,900 tons reduced)
 - 2,500 Diesel to Electric (\$55.5m – 19,400 tons reduced)
 - 271 New Electric (\$2.9m)
 - Natural Gas to Electric (Coming Soon)
- Equipment Repowers (Graders, Dozers, etc.)
- Forklifts (New Electric)
- Heavy-Duty Trucks
 - Truck Voucher Program
 - Up to \$50,000 per truck



Future Ag Programs

- Ag Tractor Trade Up Program
 - Current pilot program
 - \$500,000 grant from ARB for first 20 transactions
 - ARB looking to offer \$3 million to the District to expand program next year
- Electrifying Dairy Feed Mixers
 - One project funded through District's Technology Advancement Program
 - Data from that project will be used to start new program