Update on the Development of the San Joaquin Valley PM2.5 SIP and Consideration of Contingency Measures

September 28, 2017
Update on SJV PM Attainment Strategy
October Board Direction

- Identify near-term reductions from stationary and mobile sources
- Develop comprehensive attainment strategy to meet all PM2.5 standards
- Recognize shared responsibility between CARB and the District in meeting the PM2.5 standards
- Provide opportunity for further public input on developing the Valley’s PM2.5 SIP
What’s in the Valley’s Air?

Particles formed from Vehicle Exhaust 39%
Particles from Stationary Sources 11%
Carbon from Burning 43%
Urban & Agricultural Dust 7%

Bakersfield 2015 Annual Average Composition
SIP Modeling for the Valley

- Over 80 modeling runs conducted to assess contributing sources and needed reductions
- Demonstrates need for comprehensive reductions from stationary and mobile sources
- Evaluates how sensitive pollutant concentrations are to changes in emissions
Reductions from Mobile Sources

• Current mobile program will reduce NOx in the Valley over 157 tpd
• Additional 32 tpd reductions from new measures
  • Low NOx engine standards
  • Zero emission mobile equipment
  • Heavy-duty I&M program
  • Low emission diesel fuel
• New ag equipment measure
New State SIP Measures for Agricultural Equipment

- Accelerating turnover of older tractors
  - Incentive measures coupled with regulatory commitment
- Electrifying farm utility vehicles
- Significant new state funds for agricultural equipment
  - $135 million statewide
PM2.5 Benefits of Mobile Program
24-Hour Standard

Fresno 24-Hour PM2.5 Concentration

<table>
<thead>
<tr>
<th>Concentration (μg/m³)</th>
<th>Current PM2.5 Contribution from Mobile</th>
<th>Remaining PM2.5 from Mobile in 2024</th>
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- Ammonium Nitrate (Mobile)
Stationary Sources

• District considering new measures
  • More stringent residential wood burning rule
  • Controls on new under-fired charbroiling operations
  • Enhanced Conservation Management Practices
  • Lower NOx limits for boilers, process heaters, and stationary IC engines
  • Ultra low-NOx flares
  • Electrification of ag irrigation pumps
Carbon Particles

- Accounts for about 43% of annual PM2.5 levels
- Localized impacts
- Significant sources
  - Wood smoke from fireplaces and woodstoves
  - Restaurant under-fired charbroilers
  - Agricultural burning
Relative Cost of Reducing PM2.5

Approx. 92 times more cost-effective

Approx. 11 times more cost-effective

0

0.1

0.2

0.3

0.4

0.5

0.6

0.7

0.8

0.9

1

Charbroilers

Woodstoves / Fireplaces

HD Trucks
New Funding Available

- Funding specific to the Valley
  - $80 million – Community Emission Reduction Plans

- Funding available statewide from GGRF and other programs
  - $135 million – Ag Diesel Engine Replacement & Upgrade
  - $180 million – Hybrid Truck & Bus Incentive Project
  - $100 million – EFMP, School Buses, Transportation Equity
  - $140 million – Freight Hubs/Ports
  - $140 million – California Vehicle Rebate Program
Reduction Wood Smoke

- **Existing program**
  - Use of registered wood burning devices at PM2.5 levels up to 65 ug/m³
  - Fireplaces and unregistered devices prohibited above 20 ug/m³ level
  - Incentives for clean burning devices

- **Proposed strategy**
  - Restrict use of registered wood burning devices above 35 ug/m³
  - Fireplaces and unregistered devices restricted above 12 ug/m³
  - Expand incentivized use of cleaner burning devices
Commercial Charbroilers

• Existing program
  • Emission controls on chain-driven charbroilers
  • Pilot program to demonstrate technologies for controlling emissions from under-fired charbroilers

• Proposed strategy
  • Controls on new restaurants
  • Incentivize retrofit controls at large restaurants in Fresno and Bakersfield
Benefits of Controls on Burning 24-Hour Standard

Fresno 24-Hour PM2.5 Concentration

- Current Contribution from Burning
- Remaining Contribution from Burning in 2024

Concentration (µg/m³)

- Carbon (Burning)
Benefits of Strategy

Fresno 24-Hour PM2.5 Concentration

Current Proposed Strategy

- Ammonium Nitrate (Mobile)
- Ammonium Sulfate (Industries)
- Carbon (Burning)
- Dust
Strategy Impact on Annual PM2.5 Levels

Bakersfield Annual PM2.5 Concentration

Current Proposed Strategy

Annual Standard

Concentration (ug/m³)

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<th>Current</th>
<th>Proposed Strategy</th>
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Strategy to Attain the Annual Standard

- Continue to work with District to close small remaining attainment gap
- Additional fugitive dust controls
  - Enhance Conservation Management Practices to reduce dust from fallow lands and cropland tilling
  - Upgrade almond harvesting equipment with dust control technology
Action on SJV PM Contingency SIP
Consideration of PM2.5 Contingency Measures

- EPA approved contingency SIP in 2014
- EPA later withdrew approval due to court decision of reliance on waiver measures not submitted to SIP
- CARB submitted waiver measures into the SIP
- SIP revision addresses pending sanctions
Next Steps

• Staff will submit contingency measure
• December 2017: District consideration of Comprehensive PM2.5 SIP
• March 2018: CARB consideration of Comprehensive PM2.5 SIP
• Ongoing: Outreach and workshops