California Air Resources Board
Activity Reducing Air Pollution
South Coast Air Basin

Tribal Advisory Committee Meeting
June 18-19, 2019
Outline

* Background
* State Implementation Plans
* Freight Activities
  * Freight Handbook
  * Vehicle emissions
  * Transport Refrigeration Units
  * Railyards and locomotives
  * Harbor craft
  * Cargo handling equipment
  * At-Berth regulation
* Funding
* CARB Comments
Background
Need for Emission Reductions

- Cut air toxics health risk
- Attain air quality standards
- Mitigate climate change

Zero-emission technology/ renewable energy
The federal Clean Air Act (42 U.S.C. § 7401 et seq.) sets national standards for six criteria pollutants.

California has its own Clean Air Act (Health & Saf. Code § 39000 et seq.) that includes four additional criteria pollutants.

California also regulates greenhouse gases under the Global Warming Solutions Act of 2006 or “AB 32” (Health & Saf. Code § 38500 et seq.).
Local Air Districts
Regulate emissions from stationary sources and area sources such as agricultural and residential wood burning

California Air Resources Board
Regulate emissions from mobile sources, fuels, consumer products, and portable engines

U.S. Environmental Protection Agency
Regulations emissions from interstate sources and negotiates treaties with other countries to reduce transported emissions
Approach
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Averaging Time</th>
<th>California Standards</th>
<th>National Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Concentration</td>
<td>Method</td>
<td>Primary</td>
</tr>
<tr>
<td></td>
<td>Time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ozone (O₃)</td>
<td>1 Hour</td>
<td>0.08 ppm (180 µg/m³)</td>
<td>Ultraviolet Photometry</td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>0.07 ppm (170 µg/m³)</td>
<td>—</td>
</tr>
<tr>
<td>Respirable Particulate Matter (PM₁₀)</td>
<td>24 Hour</td>
<td>50 µg/m³</td>
<td>Geometric or Beta Attenuation</td>
</tr>
<tr>
<td>Fine Particulate Matter (PM₂.₅)</td>
<td>24 Hour</td>
<td>12 µg/m³</td>
<td>Geometric or Beta Attenuation</td>
</tr>
<tr>
<td>Carbon Monoxide (CO)</td>
<td>1 Hour</td>
<td>0.18 ppm (30 µg/m³)</td>
<td>Non-Dispersive Infrared Photometry (NDIR)</td>
</tr>
<tr>
<td></td>
<td>8 Hour</td>
<td>9.0 ppm (13 mg/m³)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>8 Hour (Lake Tahoe)</td>
<td>0.3 ppm (1 mg/m³)</td>
<td>—</td>
</tr>
<tr>
<td>Nitrogen Dioxide (NO₂)</td>
<td>1 Hour</td>
<td>0.03 ppm (55 µg/m³)</td>
<td>Gas Phase Chemiluminescence</td>
</tr>
<tr>
<td></td>
<td>3 Hour</td>
<td>—</td>
<td>Ultraviolet Fluorescence</td>
</tr>
<tr>
<td></td>
<td>24 Hour</td>
<td>0.34 ppm (53 µg/m³)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Annual Average</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Lead</td>
<td>30 Day Average</td>
<td>1.5 µg/m³</td>
<td>Atomic Absorption</td>
</tr>
<tr>
<td></td>
<td>Calendar Quarter</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>Rolling 3-Month Average</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Visibility Reducing Particles</td>
<td>8 Hour</td>
<td>See footnote 14</td>
<td>Beta Attenuation and Transmittance Through Filter Tape</td>
</tr>
<tr>
<td>Sulfates</td>
<td>24 Hour</td>
<td>25 µg/m³</td>
<td>Ion Chromatography</td>
</tr>
<tr>
<td>Hydrogen Sulfide</td>
<td>1 Hour</td>
<td>0.00 ppm (4 µg/m³)</td>
<td>Ultraviolet Fluorescence</td>
</tr>
<tr>
<td>Vinyl Chloride</td>
<td>24 Hour</td>
<td>0.01 ppm (19 µg/m³)</td>
<td>Gas Chromatography</td>
</tr>
</tbody>
</table>
State Implementation Plan

* General outline of how nonattainment areas will meet federal standards by a mandated deadline

* SIPs must be approved through a public process

* SIPs must include regulations to lower emissions and bring the air pollution down to safe levels

* Once approved by U.S. EPA, the SIP is federally Enforceable
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Year Designated</th>
<th>Level Determined to be Safe</th>
<th>Designation (Classification)</th>
<th>Attainment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-hour Average Ozone</td>
<td>1979</td>
<td>0.12 parts per million (ppm)</td>
<td>Nonattainment (Extreme)</td>
<td>2/6/2023</td>
</tr>
<tr>
<td>8-hour Average Ozone</td>
<td>1997</td>
<td>0.08 ppm</td>
<td>Nonattainment (Extreme)</td>
<td>6/15/2024</td>
</tr>
<tr>
<td></td>
<td>2008</td>
<td>0.075 ppm</td>
<td>Nonattainment (Extreme)</td>
<td>7/20/2032</td>
</tr>
<tr>
<td></td>
<td>2015</td>
<td>0.070 ppm</td>
<td>Nonattainment (Extreme)</td>
<td>8/3/2038</td>
</tr>
<tr>
<td>24-hour Average PM2.5</td>
<td>2006</td>
<td>35 µg/m3</td>
<td>Nonattainment (Serious)</td>
<td>12/31/2019</td>
</tr>
<tr>
<td>Annual Average PM2.5</td>
<td>2012</td>
<td>12.0 µg/m3</td>
<td>Nonattainment (Serious)</td>
<td>12/31/2025</td>
</tr>
</tbody>
</table>
State Implementation Plans for the South Coast Air Basin

• On March 23, 2017, the California Air Resources Board approved the South Coast Air Quality Management Plan and the 2016 State Strategy for the State Implementation Plan

• These two Plans were developed to bring air pollution in the Basin down to levels considered safe by U.S. EPA

• The Plans require the most stringent air quality control regulations in the Country
## South Coast Measures for Stationary Sources

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TITLE</th>
<th>Implementation Period</th>
<th>Target</th>
<th>Reductions (tpd) (2023/2031)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMB-01</td>
<td>Transition to Zero and Near-Zero Emission Technologies for Stationary Sources</td>
<td>Ongoing</td>
<td>NOx</td>
<td>2.5 / 6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>VOC</td>
<td>1.2 / 2.8</td>
</tr>
<tr>
<td>CMB-02</td>
<td>Emission Reductions from Replacement with Zero or Near-Zero NOx Appliances in Commercial and Residential Applications</td>
<td>2020–2031</td>
<td>NOx</td>
<td>1.1 / 2.6</td>
</tr>
<tr>
<td>CMB-03</td>
<td>Emission Reductions from Non-Refinery Flares</td>
<td>2020</td>
<td>NOx</td>
<td>1.4 / 1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>VOC</td>
<td>0.4 / 0.4</td>
</tr>
<tr>
<td>CMB-04</td>
<td>Emission Reductions from Restaurant Burners and Residential Cooking</td>
<td>2022</td>
<td>NOx</td>
<td>0.8 / 1.6</td>
</tr>
<tr>
<td>CMB-05</td>
<td>Further NOx Reductions from RECLAIM Assessment</td>
<td>2031</td>
<td>NOx</td>
<td>0 / 5</td>
</tr>
<tr>
<td>ECC-01</td>
<td>Co-Benefit Emission Reductions from GHG Programs, Policies, and Incentives</td>
<td>Ongoing</td>
<td>All</td>
<td>TBD¹</td>
</tr>
<tr>
<td>ECC-02</td>
<td>Co-Benefits from Existing Residential and Commercial Building Energy Efficiency Measures</td>
<td>Ongoing</td>
<td>NOx</td>
<td>0.3 / 1.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>VOC</td>
<td>0.07 / 0.29</td>
</tr>
<tr>
<td>ECC-03</td>
<td>Additional Enhancements in Reducing Existing Residential Building Energy Use</td>
<td>Ongoing</td>
<td>NOx</td>
<td>1.2 / 2.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>VOC</td>
<td>0.2 / 0.3</td>
</tr>
<tr>
<td>ECC-04</td>
<td>Reduced Ozone Formation and Emission Reductions from Cool Roof Technology</td>
<td>Ongoing</td>
<td>All</td>
<td>TBD¹</td>
</tr>
<tr>
<td>FLX-01</td>
<td>Improved Education and Public Outreach</td>
<td>Ongoing</td>
<td>NOx</td>
<td>N/A²</td>
</tr>
<tr>
<td>MCS-01</td>
<td>Improved Breakdown Procedures and Process Re-Design</td>
<td>All</td>
<td></td>
<td>N/A²</td>
</tr>
<tr>
<td>MCS-02</td>
<td>Application of All Feasible Measures</td>
<td>All</td>
<td></td>
<td>TBD³</td>
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<tr>
<td>BCM-10</td>
<td>Emission Reductions from Greenwaste Composting</td>
<td>2020</td>
<td>VOC</td>
<td>1.5 / 1.8</td>
</tr>
<tr>
<td>FUG-01</td>
<td>Improved Leak Detection and Repair</td>
<td>2022</td>
<td>VOC</td>
<td>2 / 2</td>
</tr>
<tr>
<td>CTS-01</td>
<td>Further Emission Reductions from Coatings, Solvents, Adhesives, and Sealants</td>
<td>202-2031</td>
<td>VOC</td>
<td>1 / 2</td>
</tr>
<tr>
<td>FLX-02</td>
<td>Stationary Source VOC Incentives</td>
<td>Ongoing</td>
<td>VOC</td>
<td>TBD²</td>
</tr>
</tbody>
</table>
## South Coast Measures for Mobile Sources

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TARGET</th>
<th>TITLE</th>
<th>IMPLEMENTATION PERIOD</th>
<th>REDUCTIONS (TPD) (2023/2031)</th>
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</thead>
<tbody>
<tr>
<td>EGM-01</td>
<td>all</td>
<td>Emission Reductions from New Development and Redevelopment Projects</td>
<td>2019-2031</td>
<td>TBD¹</td>
</tr>
<tr>
<td>MOB-01</td>
<td>NOx, SOx, PM</td>
<td>Emission Reductions at Commercial Marine Ports</td>
<td>Ongoing</td>
<td>TBD²</td>
</tr>
<tr>
<td>MOB-02</td>
<td>NOx, PM</td>
<td>Emission Reductions at Rail Yards and Intermodal Facilities</td>
<td>Ongoing</td>
<td>TBD³</td>
</tr>
<tr>
<td>MOB-03</td>
<td>All</td>
<td>Emission Reductions at Warehouse Distribution Centers</td>
<td>2019-2031</td>
<td>TBD</td>
</tr>
<tr>
<td>MOB-04</td>
<td>All</td>
<td>Emission Reductions at Commercial Airports</td>
<td>2019-2031</td>
<td>TBD</td>
</tr>
<tr>
<td>MOB-05</td>
<td>VOC, NOx, CO</td>
<td>Accelerated Penetration of Partial Zero-Emission and Zero-Emission Vehicles</td>
<td>Ongoing</td>
<td>TBD⁴</td>
</tr>
<tr>
<td>MOB-06</td>
<td>VOC, NOx, CO</td>
<td>Accelerated Retirement of Older Light-Duty and Medium-Duty Vehicles</td>
<td>Ongoing</td>
<td>TBD⁵</td>
</tr>
<tr>
<td>MOB-07</td>
<td>NOx, PM</td>
<td>Accelerated Penetration of Partial Zero-Emission and Zero-Emission Light-Heavy- and Medium-Heavy-Duty Vehicles</td>
<td>Ongoing</td>
<td>TBD⁶</td>
</tr>
<tr>
<td>MOB-08</td>
<td>NOx, PM</td>
<td>Accelerated Retirement of Older On-Road Heavy-Duty Vehicles</td>
<td>2019-2031</td>
<td>TBD⁷</td>
</tr>
<tr>
<td>MOB-09</td>
<td>NOx, PM</td>
<td>On-Road Mobile Source Emission Reduction Credit Generation Program</td>
<td>2019-2027</td>
<td>TBD⁸</td>
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<tr>
<td>MOB-10</td>
<td>NOx</td>
<td>Extension of the SOON Provision for Construction/Industrial Equipment</td>
<td>Ongoing</td>
<td>2.0 / 2.0</td>
</tr>
<tr>
<td>MOB-11</td>
<td>VOC, NOx, CO</td>
<td>Extended Exchange Program</td>
<td>Ongoing</td>
<td>2.9 / 1.0 [NOx]</td>
</tr>
<tr>
<td>MOB-12</td>
<td>NOx, PM</td>
<td>Further Emission Reductions from Passenger Locomotives</td>
<td>2017-2023</td>
<td>TBD⁹</td>
</tr>
<tr>
<td>MOB-13</td>
<td>NOx, SOx, PM</td>
<td>Off-Road Mobile Source Emission Reduction Credit Generation Program</td>
<td>2019-2027</td>
<td>TBD⁰</td>
</tr>
<tr>
<td>MOB-14</td>
<td>NOx, PM</td>
<td>Emission Reductions from Incentive Programs</td>
<td>2016-2024</td>
<td>11 / 7.8 [NOx]</td>
</tr>
</tbody>
</table>
California Regulations to Reduce Emissions from On-road Sources

- **Regulations on Heavy-Duty Vehicles**
  - Establish clean engine standards for Heavy-duty Trucks and federal sources
  - Idling limits for Trucks and Buses

- **Regulations on Light-Duty Vehicles**
  - Require Zero and Near-Zero Emission Vehicles

- **Motor Vehicle Fuels Regulations**
  - Expand use of cleaner fuels

- **Ensure Emission Control Durability**
  - SMOG check program and On-Board Diagnostic
  - Warranty requirements for emission related parts
Freight Activities
## Existing Strategies to Cut Freight Emissions and Health Risk

<table>
<thead>
<tr>
<th>Trucks</th>
<th>Ships</th>
<th>Locomotives</th>
<th>Equipment</th>
<th>Harbor Craft</th>
</tr>
</thead>
</table>
| • Fuel/engine  
• In-use trucks/turnover  
• GHG limits  
• Idling and smoke limits  
• In-use compliance | • Fuel  
• At berth reductions  
• Ship incinerator ban | • Fuel  
• Fleet emission limits for South Coast  
• Diesel soot reduction at rail yards | • Fuel/engine  
• Port & rail equipment  
• Forklifts  
• Airport equipment  
• Transport refrigerators | • Fuel  
• Harbor craft engines |

Incentives to demonstrate & deploy cleaner models
New Freight Actions and Timeline

**Zero Emission (ZE) Operation**

- **2018**
  - Truck GHG ✔
  - Truck OBD ✔

- **2019**
  - ZE truck certification ✔
  - ZE trucks-mfrs
  - ZE ships at berth
  - Handbook-1 Warehouses

- **2020**
  - Rail yard idling
  - ZE TRUs
  - Heavy-duty Omnibus
  - Heavy-duty I/M
  - Harbor craft

- **2021**
  - ZE forklifts
  - Handbook-2 Ports, Rail
  - Low-emission diesel fuel

- **2022**
  - ZE trucks-fleets
  - ZE drayage trucks
  - ZE cargo equipment
  - Non-preempted locomotives

**Lower Emissions**
Path Forward on Freight

- Protect communities near freight facilities
- Tighten CARB rules & add facility infrastructure/compliance
- Support district facility-based measures & port initiatives
- Pursue stricter federal & international standards
- Coordinate & expand incentives for freight transition to zero emission operations
Cleaner Trucks

* ZE Advanced Clean Trucks
  *To be implemented concurrently:*
    – Phase 1: Manufacturer sales %
    – Phase 2: Fleet purchase %

* Heavy-duty Omnibus regulation for new engines

* Heavy-duty Inspection & Maintenance
Transport Refrigeration Units

* Focus on transitioning to ZE operation
  - ZE truck TRUs
  - Plug-in trailer TRUs when stationary
  - Facility infrastructure
  - Electronic tracking
Staff working to consolidate two new regulatory measures

UP and BNSF are complying with the 1998 Agreement

ZE demo projects & Tier 4 grants in progress
Harbor Craft

- Focus on cleaner combustion for in-use and new engines
- Support introduction of zero-emission technologies in ferries, excursion, other
Update to At Berth Regulation

- Replacement of the regulation:
  - Compliance based on actions during a single visit
  - Responsibilities to reduce emissions for all crucial parties
  - Achieves additional emissions reductions from new vessel categories and ports/marine terminals
  - Resolves some operational challenges from existing regulation
  - Flexibility to choose emissions reduction strategy that works best for unique situations
  - Increased enforcement mechanisms
Freight Regulation Reporting System

Facilities: ports & terminals, rail yards, warehouses, grocery stores, etc.

TRUs
Cargo equipment
Locomotives
Drayage trucks
Harbor craft
Ocean going vessels

A new web-based system for registration, compliance reporting & analysis, enforcement, and public access
# Next Steps

<table>
<thead>
<tr>
<th>New CARB Rules and Other Actions</th>
<th>To Board</th>
<th>Implement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight Handbook – Module 1</td>
<td>2019</td>
<td>2019</td>
</tr>
<tr>
<td>At-Berth</td>
<td>2019</td>
<td>2023+</td>
</tr>
<tr>
<td>Harbor craft</td>
<td>2020</td>
<td>2023+</td>
</tr>
<tr>
<td>Rail yard idling and other operations</td>
<td>2020</td>
<td>2023+</td>
</tr>
<tr>
<td>Freight Handbook – Module 2+</td>
<td>2021+</td>
<td>2021+</td>
</tr>
<tr>
<td>Non-preempted locomotives</td>
<td>2022</td>
<td>2025+</td>
</tr>
<tr>
<td>ZE Drayage trucks</td>
<td>2022</td>
<td>2026-28+</td>
</tr>
</tbody>
</table>
Funding
Recent Freight Facility Funding

* $205 million in CARB grants for zero/near-zero emission equipment and infrastructure at facilities
* 11 projects are located in disadvantaged communities
* Projects range from electric locomotives, trucks and TRUs to a hybrid tugboat and electric cranes and forklifts
AB 617 Community Air Grant Recipients
May 2018

- Rose Foundation for Communities & the Environment
- Greenaction for Health & Environmental Justice
- West Oakland Environmental Indicators Project
- Central California Asthma Collaborative
- El Pueblo Para el Aire y Agua Limpia
- Citizens for Responsible Oil & Gas
- Californians for Pesticide Reform
- Environmental Health Coalition
- Fresno Metropolitan Ministry
- Comite Civico Del Valle, Inc.
- Groundwork Richmond
- Clean Water Fund
- Comite Pro Uno
- Casa Familiar

Valley LEAP
Pala Band of Mission Indians
Special Service for Groups, Inc.
Physicians for Social Responsibility
Charitable Ventures of Orange County
Communities for a Better Environment
Madera Coalition for Community Justice
Big Pine Paiute Tribe of the Owens Valley
The Regents of the University of California
Twenty-Nine Palms Band of Mission Indians
Legacy LA Youth Development Corporation
Leadership Counsel for Justice and Accountability
Physicians, Scientists & Engineers for Healthy Energy

Inaugural Community Air Grants

- Supports capacity building of California communities to participate in Community Air Protection Program (AB 617) implementation
- 65 applications received
- $18.9M funding requested
- Nearly $10M awarded
- Statewide distribution, variety of project sizes and types
**Tribal Awardees**

**Big Pine Paiute Tribe of the Owens Valley**
- Installation of an air monitor; coordination with local air district and Tribal air monitoring networks; student engagement through STEM awareness

**Pala Band of Mission Indians**
- Develop an air monitoring network and real-time data website; coordination with neighboring Tribes; partnership and capacity building

**Twenty-Nine Palms Band of Mission Indians**
- Creating Tribal air monitoring program; community outreach and resident empowerment
Coalition for Clean Air
• Information sharing and capacity building in Maywood; development of action plans for reducing local toxic air pollution and engaging the community in air monitoring activities to protect public health

Communities for a Better Environment
• Increase awareness and engage with residents to effectively impact decision-making

Legacy LA Youth Development Corporation
• Engage residents through leadership development; identify potential emission reduction measures for park project at Ramona Gardens housing development

Madison Park Neighborhood Association
• Supports logistical and technical assistance to expand engagement opportunities for Madison Park residents; develop a plan for community-based monitoring

Physicians for Social Responsibility - Los Angeles
• Strengthen the knowledge and capacity of residents; facilitate stakeholder engagement in policy processes; identify and advance preliminary strategies to influence AB 617 community emissions reduction plans

Special Service for Groups, Inc.
• Educate, engage, and empower Alhambra and Monterey Park residents to advocate for policy change that will lower levels of air pollution and improve community health
Second Year - 2019
AB 617 Community Air Grants

- Second Year Timeline:
  - May 2019: Draft Release
  - June 2019: Final Release
  - Fall 2019: Awards Announced

- Funding Amounts:
  - Educational
    - Up to $2M for all Education Projects
    - Up to $100K per project
  - Technical
    - Up to $3M for all Technical Projects
    - Up to $300K per project
  - Overall
    - $5M Total for Year 2

https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/community-air-grants
CARB Comments
CARB Comments on two general CEQA categories:

- Larger freight and logistics projects (trucking, warehouses, ports) that do inadequate CEQA analysis or inadequate mitigation
- Projects that claim no analysis is needed because of the availability of credits under the Cap-and-Trade program

CARB Comments can be found here: https://www.arb.ca.gov/toxics/ttdceqalist/ttdceqalist.htm.
Contact

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