Public Consultation Meeting

Facility Based Mobile Source Measure for Commercial Airports

Thursday, October 10, 2019
10:00 AM

South Coast Air Quality Management District Auditorium
Facility Based Mobile Source Measures (FBMSM)

15 South Coast AQMD Mobile Source Measures in 2016 AQMP*

Emissions Growth Management
- EGM-01 New Development and Redevelopment

Facility-Based
- MOB-01 Commercial and Marine Ports
- MOB-02 Rail Yards and Intermodal Facilities
- MOB-03 Warehouse Distribution Centers
- MOB-04 Commercial Airports

On-Road
Off-Road
Incentives

* 2016 Air Quality Management Plan was adopted in March 2017
South Coast AQMD Governing Board’s Direction (May 2018)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airports</td>
<td>Pursue MOUs to implement airport clean air action plans (non-aircraft airport sources)</td>
</tr>
<tr>
<td>Ports</td>
<td>Pursue MOUs to implement specific CAAP measures; Pursue introduction of cleaner vessels</td>
</tr>
<tr>
<td>New/Redevelopment</td>
<td>Continue to work with stakeholders to develop rule concepts and preliminary costs/benefits</td>
</tr>
<tr>
<td>Warehouses</td>
<td>Develop rule concept; Conduct economic impacts study to inform rule concept</td>
</tr>
<tr>
<td>Rail yards</td>
<td>Pursue rulemaking; Explore potential for new agreements/MOUs beyond the 1998 and 2005 agreements</td>
</tr>
</tbody>
</table>
Existing Regulations Affecting Non-Aircraft Airport Operations

South Coast AQMD’s Fleet Rules
- R1191 Clean On-Road Light- and Medium-Duty Public Fleet Vehicles
- R1196 Clean On-Road Heavy-Duty Public Fleet Vehicles
- R1194 Commercial Airports Ground Access

CARB’s Regulations
- GSE MOU (terminated in 2006)
- In-Use Off-Road Diesel-Fueled Fleets
- On-Road Heavy-Duty Diesel Vehicles (In-Use)
- Large Spark-Ignition (LSI) Engine Fleet Requirements
New and Upcoming Regulations Affecting Non-Aircraft Airport Operations

Zero-Emission Airport Shuttle Regulation
- Adopted in June 2019
- Requires at least 33%, 66% and 100% zero-emission airport shuttles in 2027, 2031 to 2035, respectively

Zero-Emission Airport Ground Support Equipment (GSE)
- Scheduled for Board consideration in late 2020
- Goal of 100% ZE GSE by 2032
Memorandum of Understanding (MOU)

• Voluntary agreement between South Coast AQMD and each commercial airport to achieve SIP creditable emission reductions

• Five commercial airports in SCAB
Public Process to Develop Draft MOUs

- Airports MOU working group meetings
  - Working group meeting #1 – February 28, 2019
  - Working group meeting #2 – May 8, 2019
  - Working group meeting #3 – July 18, 2019
  - Working group meeting #4 – October 15, 2019

- Updates to South Coast AQMD’s Mobile Source Committee

- Public Consultation Meeting – October 10, 2019

- Airports’ AQIPs/AQIM/MOUs subject to approval by respective airport authority

- Each MOU subject to approval by South Coast AQMD
South Coast AQMD-Airports MOU Process

**AQIP/AQIM**
- Each airport has developed an air quality improvement plan/measures (AQIP/AQIM)
- AQIP/AQIM includes strategies to reduce emissions from non-aircraft airport sources

**MOUs**
- South Coast AQMD has developed a draft MOU with each commercial airport to reduce emissions
- MOUs are based on the airports’ SIP creditable AQIP/AQIM measures

**SIP Credits**
- South Coast AQMD to work with EPA to get SIP credits for AQIP/AQIM measures
- If emission reductions not fully achieved, South Coast AQMD provides substitute measures
MOU Commitments

**Airports**

- Implementing AQIP/AQIM measures included in MOUs by working with airport tenants
- Annual reporting to South Coast AQMD on implementation of AQIP/AQIM measures, including equipment data and emission benefit calculations

**South Coast AQMD**

- Quantify SIP creditable emission reductions for AQIP/AQIM measures (2023, 2031)
- Provide federally enforceable commitments and report emission reduction benefits to U.S. EPA
- Establish metrics to track implementation progress
- Process to cover potential shortfall
- Provide public access and disclosure
AQIP/AQIM Emissions Sources

- Non-aircraft mobile source emissions associated with airport operations which are under direct control of the airport authority or which can be influenced through agreements, permits, or licenses with airport vendors/tenants.

- Categories included in AQIPs/AQIM vary; cover the following categories:
  - **Ground Support Equipment (GSE)**
    - Tugs and Tractors
    - Belt Loaders
    - Container Loaders
    - Ground Power Units
  - **Heavy-Duty Vehicles**
    - Delivery Trucks
  - **Off-Road Equipment**
    - Forklift
    - Loader
    - others
  - **Passenger/Employee Transportation**
    - Shuttle buses
    - Taxis
    - Passenger cars
    - Other
AQIP/AQIM Measures

- Specific measures vary among airports, reflecting uniqueness of each airport
- Common measures for GSE, airport-owned fleet, improvement in passenger traffic and infrastructure
- Performance targets for measures vary among airports
- Emission reduction benefits estimated for quantifiable measures
AQIP/AQIM Emissions Inventory

2017
Base Year

2023
• Business-As-Usual
• Forecast with AQIP measures

2031
• Business-As-Usual
• Forecast with AQIP measures
EPA’s Requirements for eligibility of emission reductions for SIP credits

- Integrity Elements
- Federal Enforceability
- Technical Support
- Funding
- Legal Authority
- Public Disclosure and Tracking
EPA’s Integrity Elements – Requirements for Emission Reductions

Surplus  Permanent  Quantifiable  Enforceable
AQIP/AQIM Measures in MOUs

- MOUs identify specific AQIP/AQIM measures that are eligible for SIP credits

- MOUs establish metrics for quantification of emission benefits associated with implementation of AQIP/AQIM measures for 2023 and 2031 and airports’ reporting requirements to South Coast AQMD
Specific AQIP/AQIM measures eligible for SIP credits

**LAX**
- GSE: Achieve fleet average NOx + Hydrocarbon emission factors of 1.8 and 1.0 grams per brake horsepower-hour in 2023 and 2031, respectively
- Alternative Fuel Vehicle Incentive Program: Implement an incentive program to distribute up to $500,000 dollars in funding to assist the purchase of zero or near-zero emission vehicles by December 31, 2021
- LAWA Clean Fleet Program: Replace 20% and 100% of LAWA-owned and operated buses with zero-emission buses by 2023 and 2031, respectively

**BUR**
- GSE: Achieve fleet average hydrocarbon plus NOx combined emission factors of 1.92 and 0.82 g/bhp-hr in 2023 and 2031, respectively
- Zero-Emission Shuttle Bus Program: Replace 50% and 100% of BUR-owned and operated buses with electric buses by 2023 and 2031, respectively
Specific measures eligible for SIP credits (cont’d)

**JWA**
- **GSE:** Achieve fleet average NOx emission factors of 1.7 and 0.9 g/bhp-hr in 2023 and 2031, respectively.
- Parking Shuttle Bus Electrification: Replace a minimum of 50% and 80% of airport shuttle buses with battery-electric shuttle buses by 2023 and 2031, respectively.

**LGB**
- **GSE:** Achieve fleet average HC + NOx emission factors of 0.93 and 0.44 g/bhp-hr in 2023 and 2031, respectively.

**ONT**
- **GSE:** Achieve fleet average NOx emission factors of 2.20 and 1.00 g/bhp-hr in 2023 and 2031, respectively.
SIP Credit Calculations – Emissions Inventory

2016 AQMP
- Statewide Top-down approach
- Based on 2012 activity
- EMFAC 2014

AQIP/AQIM
- Airport Specific Bottom-up approach
- Based on 2017 activity
- EMFAC 2017 and newer data

SIP credits are based on the 2016 AQMP; therefore, reconciliation is needed
SIP Credit Calculation Methodology

- **GSE Measures for all airports**
  - Calculated as the difference between the AQMP baseline and the AQIP/AQIM remaining emissions

- **LAX Alternative Fuel Vehicle Incentive Measure**
  - Calculated based on the CARB Carl Moyer program guidelines and vehicle information (VMT, model year) from LAWA

- **LAWA, JWA and BUR zero emission bus programs**
  - Calculated based on vehicle specific average emission factors from 2016 AQMP and VMT data from the airports

- **JWA Jet Fuel Delivery Trucks Measure**
  - Calculated based on vehicle specific average emission factors from the 2016 AQMP and VMT data from the airport
## Potential SIP credits by airport by AQIP/AQIM measure

<table>
<thead>
<tr>
<th>Airport</th>
<th>AQIP/AQIM Measure</th>
<th>2023 Reductions (NOx, tpy)</th>
<th>2031 Reductions (NOx, tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAX</td>
<td>GSE Policy</td>
<td>146.71</td>
<td>98.94</td>
</tr>
<tr>
<td>LAX</td>
<td>LAX Alternative Fuel Vehicle Incentive Program</td>
<td>0.17</td>
<td>0.21</td>
</tr>
<tr>
<td>LAX</td>
<td>LAWA Clean Fleet Program</td>
<td>6.40</td>
<td>12.50</td>
</tr>
<tr>
<td>BUR</td>
<td>GSE</td>
<td>10.19</td>
<td>6.07</td>
</tr>
<tr>
<td>BUR</td>
<td>Zero-Emission Shuttle Bus Program</td>
<td>0.11</td>
<td>0.10</td>
</tr>
</tbody>
</table>
Potential SIP credits by airport by AQIP/AQIM measure (cont’d)

<table>
<thead>
<tr>
<th>Airport</th>
<th>AQIP/AQIM Measure</th>
<th>2023 Reductions (NOx, tpy)</th>
<th>2031 Reductions (NOx, tpy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JWA</td>
<td>GSE</td>
<td>14.53</td>
<td>7.46</td>
</tr>
<tr>
<td>JWA</td>
<td>Jet Fuel Delivery Trucks</td>
<td>1.52</td>
<td>1.13</td>
</tr>
<tr>
<td>JWA</td>
<td>Parking Shuttle Bus Electrification</td>
<td>1.34</td>
<td>1.06</td>
</tr>
<tr>
<td>LGB</td>
<td>GSE</td>
<td>0.92</td>
<td>0.49</td>
</tr>
<tr>
<td>ONT</td>
<td>GSE</td>
<td>7.83</td>
<td>9.93</td>
</tr>
</tbody>
</table>
## Total Potential NOx SIP Credits from SIP creditable AQIP/AQIM measures

<table>
<thead>
<tr>
<th>SIP creditable Emission Reductions</th>
<th>2023 (tons per day)</th>
<th>2031 (tons per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.52</td>
<td>0.38</td>
</tr>
</tbody>
</table>
South Coast AQMD’s Enforceable Commitment

- Achieve 0.52 and 0.38 tpd NOx in 2023 and 2031, respectively
- Track the airports’ implementation of the AQIP/AQIM measures with SIP creditable emission reductions based on the annual reports submitted by the airports as specified in the MOUs
- Report to EPA on:
  - Implementation of SIP creditable AQIP/AQIM measures and actual emission reductions achieved
  - Make each report and relevant data publicly available
- Adopt and submit substitute measures to EPA in the event of any emission reduction shortfall through a public process
EPA’s Integrity Element Demonstration

• Surplus
  • The performance targets for SIP creditable AQIP/AQIM measures are above and beyond the level that are required by state or local air quality regulations or a federal rule

• Permanent
  • The emission reductions expected from the SIP creditable AQIP/AQIM measures will be achieved for the entire period that they are credited into the SIP

• Quantifiable
  • Emission reductions were calculated using up-to-date methodology which is consistent with the latest AQMP/SIP. The methodology is clearly documented and available for public review

• Enforceable
  • The airports have agreed to implement the AQIP/AQIM measures and will annually report progress, enabling South Coast AQMD to verify the reductions
Next Steps

• Airports MOU working group meeting – October 15, 2019

• Adoption of draft AQIPs/AQIMs and draft MOUs by each airport authority – November 2019

• South Coast AQMD Governing Board Adoption of the FBMSM for Commercial Airports including airport MOUs and South Coast AQMD’s enforceable commitment – December 6, 2019

• Evaluate development at San Bernardino Airport