Public Consultation Meeting

Facility Based Mobile Source Measure for Commercial Airports

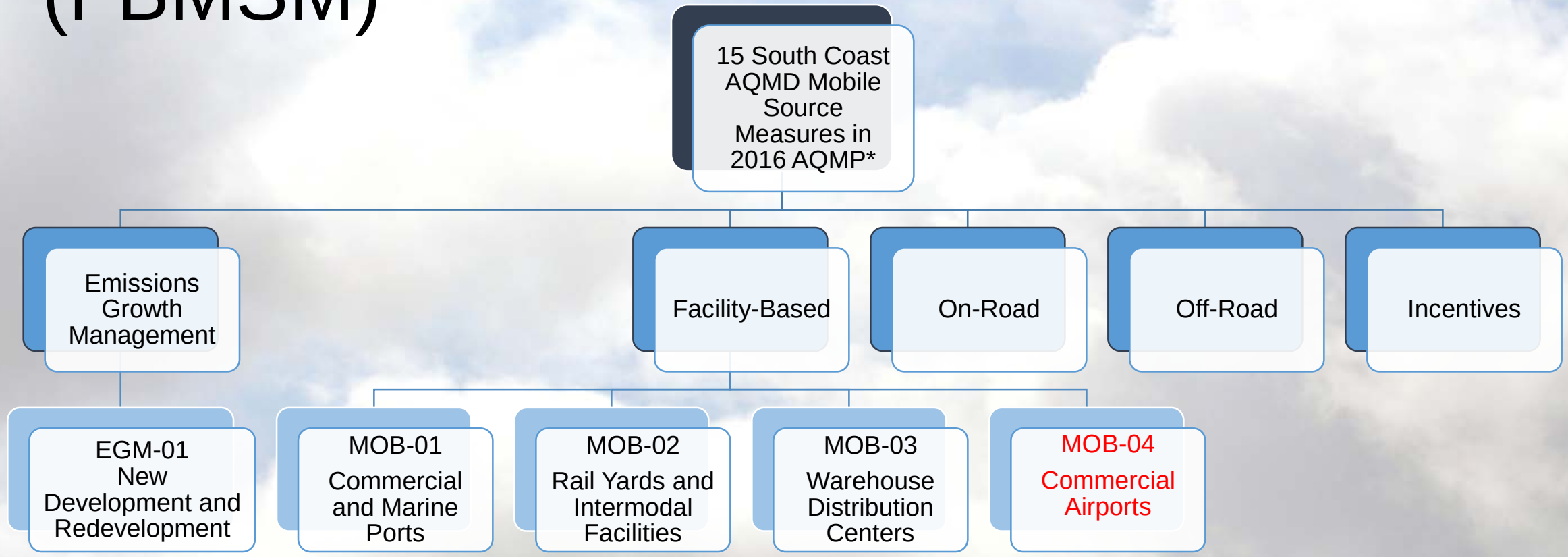
Thursday, October 10, 2019

10:00 AM

South Coast Air Quality Management District

Auditorium

Facility Based Mobile Source Measures (FBMSM)



* 2016 Air Quality Management Plan was adopted in March 2017

South Coast AQMD

South Coast AQMD Governing Board's Direction (May 2018)

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

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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

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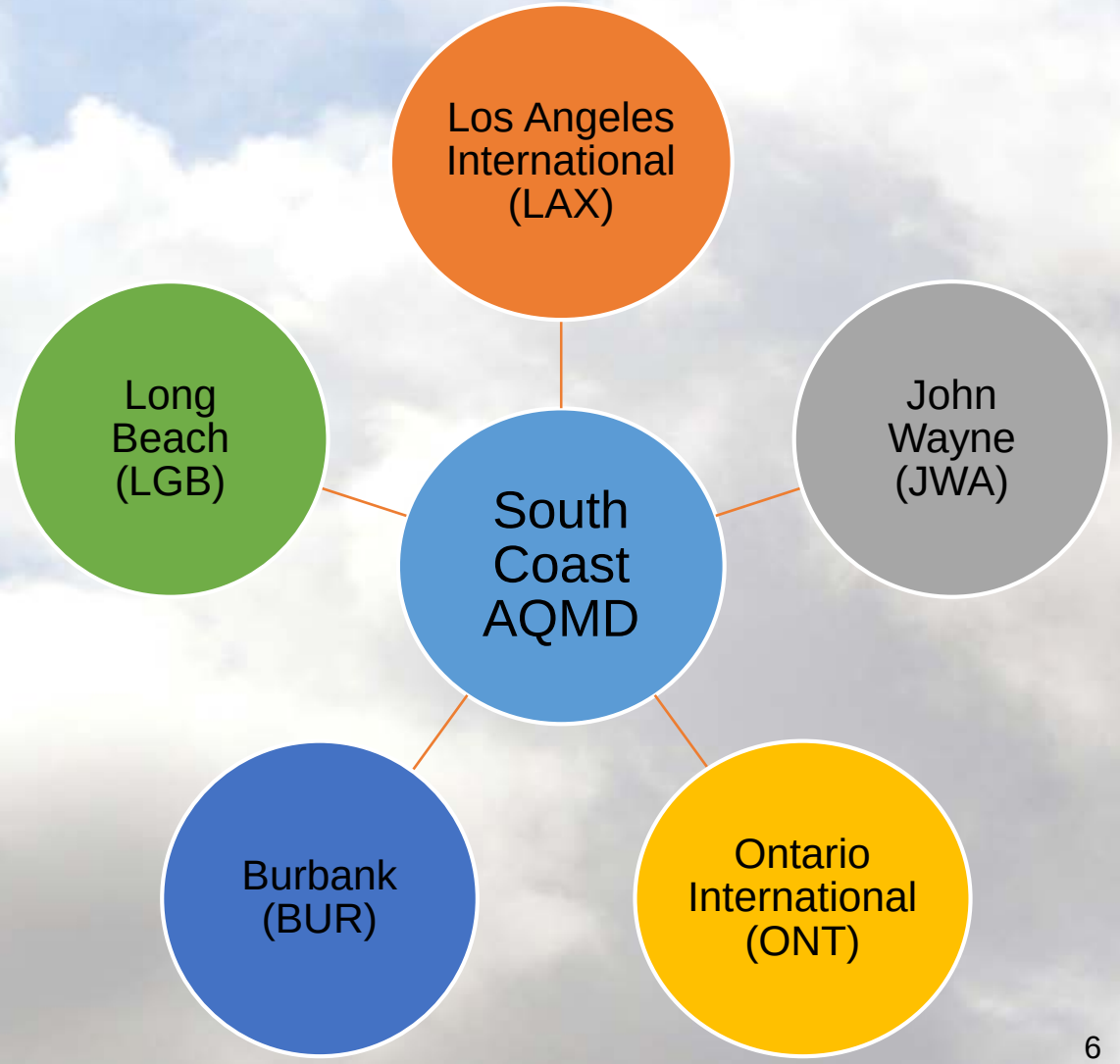
Memorandum of Understanding (MOU)

- 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

LAX

JWA

BUR

ONT

LGB

- 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

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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

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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

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- 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

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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

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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

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AQIP/AQIM Emissions Inventory

2017

Base Year

2023

- Business-As-Usual
- Forecast with AQIP measures

2031

- Business-As-Usual
- Forecast with AQIP measures

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EPA's Requirements for eligibility of emission reductions for SIP credits

- Integrity Elements
- Federal Enforceability
- Technical Support
- Funding
- Legal Authority
- Public Disclosure and Tracking

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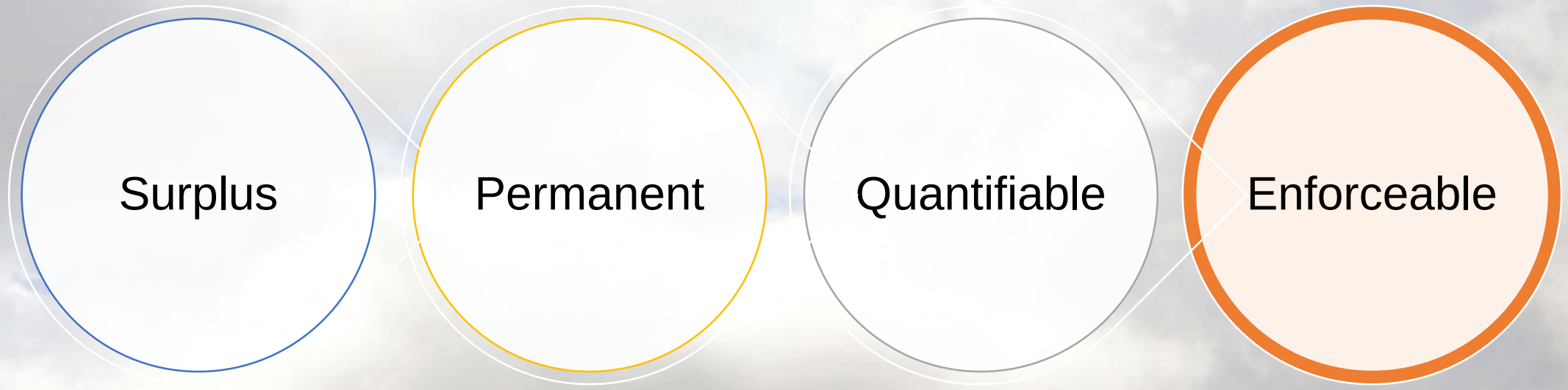
EPA's Integrity Elements – Requirements for Emission Reductions



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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

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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.
  - Jet Fuel Delivery Trucks: Install a jet fuel pipeline by 2019 to eliminate routine commercial aviation jet fuel delivery trucks by 2023
  - 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.

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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

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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

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Potential SIP credits by airport by AQIP/AQIM measure

Airport	AQIP/AQIM Measure	2023 Reductions (NOx, tpy)	2031 Reductions (NOx, tpy)
LAX	GSE Policy	146.71	98.94
LAX	LAX Alternative Fuel Vehicle Incentive Program	0.17	0.21
LAX	LAWA Clean Fleet Program	6.40	12.50
BUR	GSE	10.19	6.07
BUR	Zero-Emission Shuttle Bus Program	0.11	0.10

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Potential SIP credits by airport by AQIP/AQIM measure (cont'd)

Airport	AQIP/AQIM Measure	2023 Reductions (NOx, tpy)	2031 Reductions (NOx, tpy)
JWA	GSE	14.53	7.46
JWA	Jet Fuel Delivery Trucks	1.52	1.13
JWA	Parking Shuttle Bus Electrification	1.34	1.06
LGB	GSE	0.92	0.49
ONT	GSE	7.83	9.93

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Total Potential NOx SIP Credits from SIP creditable AQIP/AQIM measures

	2023 (tons per day)	**2031 (tons per day)**
SIP creditable Emission Reductions	0.52	0.38

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

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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

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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