

## ATTACHMENT B

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

---

## **Final Staff Report Facility-Based Mobile Source Measure for Commercial Airports**

**December 2019**

### **Deputy Executive Officer**

Planning, Rule Development, and Area Sources  
Philip M. Fine, Ph.D.

### **Assistant Deputy Executive Officer**

Planning, Rule Development, and Area Sources  
Sarah L. Rees, Ph.D.

### **Planning and Rules Manager**

Planning, Rule Development, and Area Sources  
Zorik Pirveysian

---

Authors: Sang-Mi Lee, Ph.D. – Program Supervisor  
Xinqiu Zhang, Ph.D. – Sr. Staff Specialist  
Andrew Yoon, Ph.D. – Air Quality Specialist  
Eric Praske, Ph.D. – Air Quality Specialist

Contributors: Brian Choe – Program Supervisor  
Susan Yan – Air Quality Specialist

Reviewed by: Barbara Baird – Chief Deputy Counsel  
Megan Lorenz – Principal Deputy District Counsel

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

Chairman: DR. WILLIAM A. BURKE  
Speaker of the Assembly Appointee

Vice Chairman: BEN BENOIT  
Council Member, Wildomar  
Cities of Riverside County

**MEMBERS:**

LISA BARTLETT  
Supervisor, Fifth District  
County of Orange

JOE BUSCAINO  
Council Member, 15<sup>th</sup> District  
City of Los Angeles Representative

MICHAEL A. CACCIOTTI  
Council Member, South Pasadena  
Cities of Los Angeles County/Eastern Region

VANESSA DELGADO  
Senate Rules Committee Appointee

JANICE HAHN  
Supervisor, Fourth District  
County of Los Angeles

LARRY MCCALLON  
Mayor Pro Tem, Highland  
Cities of San Bernardino County

JUDITH MITCHELL  
Mayor, Rolling Hills Estates  
Cities of Los Angeles County/Western Region

V. MANUEL PEREZ  
Supervisor, Fourth District  
County of Riverside

DWIGHT ROBINSON  
Council Member, Lake Forest  
Cities of Orange County

JANICE RUTHERFORD  
Supervisor, Second District  
County of San Bernardino

VACANT  
Governor's Appointee

**EXECUTIVE OFFICER:**

WAYNE NASTRI

## Table of Contents

<b>Executive Summary .....</b>	<b>5</b>
<b>Chapter 1: Background</b>	
<b>Introduction.....</b>	<b>10</b>
<b>A. Airports MOU Working Group Activities.....</b>	<b>11</b>
<b>B. Regulatory Background.....</b>	<b>12</b>
<b>C. U.S. EPA’s Requirements for SIP Credit.....</b>	<b>14</b>
<b>Chapter 2: Air Quality Improvement Plans/Measures</b>	
<b>Introduction.....</b>	<b>18</b>
<b>A. Los Angeles International Airport (LAX) AQIM.....</b>	<b>18</b>
Background.....	18
Baseline and BAU Emissions Inventories .....	19
List of AQIM Measures .....	19
<b>B. John Wayne Airport (JWA) AQIP .....</b>	<b>21</b>
Background.....	21
Baseline and BAU Emissions Inventories .....	21
List of AQIP Measures.....	22
<b>C. Long Beach Airport (LGB) AQIP .....</b>	<b>24</b>
Background.....	24
Baseline and BAU Emissions Inventories .....	25
List of AQIP Measures.....	25
<b>D. Ontario Airport (ONT) AQIP.....</b>	<b>26</b>
Background.....	26
Baseline and BAU Emissions Inventories .....	27
List of AQIP Measures.....	27
<b>E. Burbank Airport (BUR) AQIP .....</b>	<b>29</b>
Background .....	29
Baseline and BAU Emissions Inventories.....	29
List of measures.....	29
<b>Chapter 3: Memoranda of Understanding</b>	
<b>Introduction.....</b>	<b>33</b>

<b>A. General MOU Sections Applicable to All Airports .....</b>	<b>33</b>
MOU Purpose.....	33
MOU Term .....	33
MOU Applicability.....	33
Airport Responsibilities.....	34
South Coast AQMD Responsibilities .....	34
<b>B. Airport Specific MOU Sections .....</b>	<b>34</b>
Los Angeles International Airport .....	35
John Wayne Airport.....	36
Burbank Airport .....	37
Ontario Airport.....	38
<b>Chapter 4: Potential SIP Creditable Emission Reductions</b>	
<b>Introduction.....</b>	<b>40</b>
A. Enforceable Commitment .....	40
B. U.S. EPA’s Integrity Element Demonstration.....	43
C. Technical Analyses.....	53
D. Funding.....	53
E. Legal Authority .....	53
F. Tracking actual emission reductions from MOU measures .....	53
G. Public disclosure.....	54
H. Reporting to U.S. EPA.....	54
<b>Chapter 5: California Environmental Quality Act (CEQA) and Socioeconomic Assessment .....</b>	<b>55</b>
A. CEQA Analysis.....	56
B. Socioeconomic Assessment.....	60
<b>Chapter 6: Response to Public Comments .....</b>	<b>61</b>
<b>Appendix A: Memoranda of Understanding</b>	
A. Los Angeles International Airport	
B. Burbank Airport	
C. John Wayne Airport	
D. Long Beach Airport	
E. Ontario International Airport	
<b>Appendix B: SIP Credit Calculations</b>	

## Executive Summary

The 2016 Air Quality Management Plan (AQMP) is the latest regional blue print for achieving the federal and state air quality standards in the South Coast Air Basin (Basin). Based on the analysis in the 2016 AQMP, significant additional NO<sub>x</sub> reductions beyond what will be achieved through existing regulations are needed to achieve the federal 8-hour ozone standards in the Basin – a 45% and 55% reduction beyond baseline levels in 2023 and 2031, respectively. Controlling mobile source emissions is key to achieving these targets, as mobile sources comprise over 80% of Basin NO<sub>x</sub> emissions and are the largest contributor to the region's ozone problem. The Facility-Based Mobile Source Measures included in the 2016 AQMP are South Coast AQMD's proposed mobile source measures covering marine ports (MOB-01), railyards (MOB-02), warehouse/distribution centers (MOB-03), commercial airports (MOB-04), and new development and redevelopment projects (EGM-01). These measures are intended to help achieve the emission reductions attributed to CARB's Further Deployment of Cleaner Technology measures by reducing emissions from these facilities through South Coast AQMD's actions (e.g., indirect source rules or other programs).

The Facility-Based Mobile Source Measure (FBMSM) for Commercial Airports implements the 2016 AQMP Control Measure MOB-04, Emission Reductions at Commercial Airports. This measure applies to Los Angeles International Airport (LAX), John Wayne Orange County Airport (SNA), Hollywood Burbank Airport (BUR), Ontario International Airport (ONT), and Long Beach Airport (LGB). Following the adoption of the 2016 AQMP, staff conducted 17 working group meetings to address the FBMSM sectors during a year-long public process. Based on the working group discussions, staff recommended that South Coast AQMD pursue a voluntary Memorandum of Understanding (MOU) approach for commercial airports.

On May 4, 2018, the Board considered staff's recommendations for all FBMSMs and provided specific direction regarding both regulatory and voluntary approaches. For commercial airports, the Board approved staff's recommendation to pursue a voluntary MOU approach based on the airports' development of Air Quality Improvement Plans/Measures (AQIP or AQIM) for non-aircraft emissions. Following the Board's direction, South Coast AQMD established a new Airports MOU working group for the purpose of developing MOUs with individual commercial airports based on their respective AQIPs/AQIMs. All five commercial airports committed to preparing their own AQIPs/AQIMs and developing MOUs with South Coast AQMD.

Since that time, South Coast AQMD staff has conducted four working group meetings. During this process, staff has communicated regularly with airport representatives and their consultants to provide technical support regarding emission calculation methodologies for base and future years' emissions inventories. In addition, staff has reviewed the airports' preliminary emission inventory data, AQIPs or AQIM emission reduction measures and initiatives, and collaborated to develop the MOUs.

As part of the MOU process, each airport has developed its own AQIP or AQIM with specific measures and initiatives. The AQIPs (or AQIMs) represent the airports' comprehensive plans to reduce emissions from non-aircraft mobile sources related to airport operations (e.g., ground

support equipment, shuttle buses, delivery trucks)<sup>1</sup>. In general, a measure represents a program in which the airport agrees to a well-defined course of action with known emission reductions, while an initiative represents an objective that the airport intends to pursue, but the emission reductions are not readily quantifiable. The AQIPs/AQIMs also include the 2017 baseline emissions as well as emissions forecasts in 2023 and 2031 under business as usual (BAU) and AQIP/AQIM implementation scenarios.

Based on the AQIPs/AQIMs developed by the five commercial airports, MOUs have been developed for each of the five commercial airports. The MOUs represent voluntary agreements between South Coast AQMD and each commercial airport, with each party having specific responsibilities and commitments. The purpose of the MOUs is to quantify the emission reduction benefits associated with the implementation of the airports' AQIP/AQIM strategies that are eligible for SIP credit. Each MOU includes schedules for the eligible SIP creditable AQIP/AQIM measures that specify the metrics, performance targets, timeline for implementation, and the details of the annual reports to be prepared by the airports and submitted to South Coast AQMD.

Under the MOUs, the airports agree to implement the AQIP/AQIM measures eligible for SIP credit and achieve the performance targets in these measures. The airports also agree to provide annual reports to South Coast AQMD, by June 1st of each year beginning in 2021 and through the end of the MOU term in 2032, on the implementation of these measures, including detailed equipment/vehicle data and emissions inventories with supporting methodology and calculations for emission benefits. South Coast AQMD agrees to quantify the corresponding SIP emission reductions associated with these AQIP/AQIM measures in the MOUs and to make an enforceable commitment for these reductions to U.S. EPA for inclusion into the SIP. Based on the annual reports submitted by the airports, South Coast AQMD will also quantify the actual emission reductions for these measures for the attainment milestone years (2023 and 2031) and prepare and submit the necessary documentation to U.S. EPA for tracking these reductions. South Coast AQMD also agrees to ensure that the relevant data including the AQIPs/AQIM, MOUs, annual reports submitted by the airports, and South Coast AQMD's reports to U.S. EPA are accessible to the public.

In the event that the actual emission reductions from the implementation of the AQIP/AQIM measures specified in the MOUs are less than the projected emission reduction benefits, South Coast AQMD will be responsible for achieving the emission reduction shortfall. In such instances, South Coast AQMD also agrees to adopt and submit substitute measures to U.S. EPA to meet the shortfall, working in conjunction with the airports and other stakeholders. A public process will be initiated to facilitate the consideration of potential new or enhanced programs, or better efforts to quantify existing programs, to help South Coast AQMD meet any shortfall.

In order for emission reductions from the AQIP/AQIM measures specified in the MOUs to be eligible for SIP credit, these reductions need to meet the U.S. EPA's guidelines. These guidelines require that the emission reductions meet U.S. EPA's integrity elements (i.e., reductions must be surplus, quantifiable, permanent, and enforceable), and that the SIP submittal has federally enforceable backstop commitments, technical support, a demonstration of funding and legal

---

<sup>1</sup> Aircraft emissions are not covered in the AQIPs/AQIM/MOUs because of federal jurisdiction over aircraft.

authority, public disclosure procedures, and provisions to assess progress. The emission reductions associated with implementation of the AQIP/AQIM measures included in the five MOUs with the commercial airports meet these requirements as described in this staff report.

The FBMSM for Commercial Airports is expected to achieve 0.52 and 0.37 tons per day of NO<sub>x</sub> emission reductions in 2023 and 2031, respectively, based on the airports implementation of AQIP/AQIM measures in the MOUs. While these emission reductions are modest, they represent a significant reduction in emissions from ground support equipment. There are other AQIP/AQIM measures that airports are implementing that will result in emission reductions that may not be easily quantifiable or SIP creditable.

The MOUs for all five commercial airports are attached to the staff report. Each airport has its own public process and approval process for the AQIPs/AQIM and MOUs by its respective airport authority. Following South Coast AQMD's public process and the airports' approval of the MOUs, the FBMSM for Commercial Airports (MOUs with the commercial airports and South Coast AQMD's enforceable commitment to backstop any emission reduction shortfall) will be considered by the South Coast AQMD Governing Board for approval.

## **Chapter 1: Background**

---

Introduction

Airports MOU Working Group Activities

Regulatory Background

U.S. EPA's Requirements for SIP Emission Reduction Credit



## Introduction

The 2016 Air Quality Management Plan (AQMP), adopted by the South Coast Air Quality Management District (South Coast AQMD) Governing Board in March 2017, is the latest regional blue print for achieving the federal and state air quality standards in the South Coast Air Basin (Basin). Based on the 2016 AQMP's analysis, significant additional NO<sub>x</sub> reductions beyond existing regulations are needed to achieve the federal 8-hour ozone standards in the Basin (45% in 2023 and 55% in 2031). In addition to California Air Resources Board's (CARB's) State strategy, the 2016 AQMP also included mobile source measures proposed by South Coast AQMD including Facility-Based Mobile Source Measures (FBMSMs). FBMSMs cover facilities including ports (MOB-01), railyards (MOB-02), warehouse/distribution centers (MOB-03), commercial airports (MOB-04), and new development and redevelopment projects (EGM-01). These measures are intended to help achieve some of the emission reductions attributed to CARB's Further Deployment of Cleaner Technology measures by reducing emissions from these facilities through South Coast AQMD's actions (e.g., indirect source regulations, other programs).

MOB-04, Emission Reductions at Commercial Airports, applies to commercial airports located within the Basin. These include Los Angeles International Airport (LAX), John Wayne Orange County Airport (SNA), Hollywood Burbank Airport (BUR), Ontario International Airport (ONT), and Long Beach Airport (LGB). During the 2016 AQMP adoption, the South Coast AQMD Board (Board) approved a motion to amend MOB-04 and directed staff to *“Undertake a stakeholder process and draft for our consideration an indirect source rule for commercial airports within the South Coast Basin by February 1, 2019 to control emissions of NO<sub>x</sub>, PM<sub>2.5</sub>, lead and diesel particulate matter from non-aircraft sources.”* The Board discussion accompanying this amendment provided further direction, including a desire to let the airports prepare their own airport-specific Clean Air Action Plans (AirCAAPs). The Board would then consider this information to determine the level of control in any proposed Indirect Source Rule (ISR).

Following the adoption of the 2016 AQMP, staff initiated several working groups to address the FBMSM sectors including the commercial airports. During the year-long period, South Coast AQMD staff conducted 17 Working Group Meetings covering all five sectors. Some of the key topics discussed during the Working Group meetings included: 1) a framework for developing FBMSMs, 2) potential methods for obtaining SIP credit for voluntary measures, and 3) potential voluntary and regulatory emission reduction strategies for each facility sector. Based on working group discussions, South Coast AQMD Staff recommended that the Governing Board pursue a voluntary MOU approach for commercial airports because of the limited emissions reductions that would be available from the non-aircraft mobile sources operating at the airports, federal preemption of aircraft standards, existing emission reduction programs, and the potential willingness of airports to enter into cooperative agreements.

On May 4, 2018, South Coast AQMD's Board considered staff's recommendations for all FBMSMs and provided specific direction regarding both regulatory and voluntary approaches.<sup>2</sup>

---

<sup>2</sup> *Potential Strategies for Facility-Based Mobile Source Measures Adopted in 2016 AQMP*  
(<http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2018/2018-may4-032.pdf?sfvrsn=2>)

For commercial airports, the Board approved staff's recommendation to pursue a voluntary Memorandum of Understanding (MOU) approach (instead of an ISR approach) based on the airports' willingness to develop airport-specific Air Quality Improvement Plans/Measures (AQIP or AQIM), and the fact that commercial airports contribute only about 8 tons per day of NO<sub>x</sub> (absent aircraft emissions). However, in the event that the MOU approach was not successful, staff was directed to report back to the Board and recommend an airport ISR for the Board's consideration.

## **A. Airports MOU Working Group Activities**

Following the May 2018 Board direction, South Coast AQMD established a new Airports MOU working group for the purpose of developing MOUs with individual commercial airports based on their respective AQIPs/AQIMs. The working group consisted of representatives from South Coast AQMD, five commercial airports, commercial airlines, the California Airports Council, CARB, U.S. Environmental Protection Agency (U.S. EPA), environmental organizations, freight industries, and other stakeholders. All five commercial airports concurred with the MOU approach and committed to develop individual MOUs with South Coast AQMD based on their respective AQIPs/AQIMs. Since the establishment of the working group, South Coast AQMD staff has conducted four working group meetings, which are summarized below. During this process, South Coast AQMD staff communicated regularly with airport representatives and their consultants to provide technical support on emission calculation methodologies for baseline and future years' emissions inventories, review preliminary emission inventory data, review draft AQIPs/AQIMs and proposed strategies, and develop draft MOUs.

During the first Airports MOU Working Group meeting,<sup>3</sup> group members discussed the framework and key principles of the MOU, the process of the MOU development, and the specific commitments required by the airports and South Coast AQMD to develop and implement the MOUs. The working group members were advised on the tight timeline for MOU development to accommodate South Coast AQMD's December 2019 deadline to address Further Deployment of Cleaner Technology measures (Section 182(e)(5) measures) included in the 1997 8-hour ozone attainment strategy. Staff clarified that airports would develop their own respective AQIPs/AQIMs, which would represent the airports' best efforts to develop programs and strategies for reducing emissions from airport operations based on their existing authority over non-aircraft mobile source emissions. The AQIP/AQIM would then be used as the basis for the MOUs between South Coast AQMD and the airports. All five commercial airports confirmed their commitment to develop their own AQIPs/AQIMs and their willingness to enter into MOUs with South Coast AQMD. California Airports Council provided updates on the development of AQIPs/AQIMs on behalf of the airports. Staff discussed the U.S. EPA's integrity elements (i.e., emission reductions must be quantifiable, permanent, surplus, and enforceable) and other requirements for emission reductions from AQIP/AQIM measures to be eligible for SIP credits. Staff also offered technical assistance to the airports in their development of emissions inventories and methodologies to estimate emission reduction benefits.

---

<sup>3</sup> Held February 28, 2019.

At the second Airports MOU working Group meeting,<sup>4</sup> staff provided an update on the MOU development, reiterating that the AQIPs/AQIMs would serve as the basis for the MOUs and that staff would provide technical assistance in the quantification of emissions benefits for the purpose of obtaining SIP credit. Staff requested that the airports provide detailed emissions inventories for all non-aircraft mobile source emissions associated with airport operations that are under direct or indirect airport control. These sources include, but are not limited to, ground support equipment (GSE), trucks, off-road equipment/vehicles, and on-road vehicles (e.g., shuttles, buses, passenger vehicles). The truck category includes cargo trucks, delivery, and utility/service trucks. Inclusion of aircraft emissions in the AQIPs/AQIMs was mentioned as an option that airports could include at their discretion. For all AQIP/AQIM emission sources, the emissions inventories would include the 2017 baseline, as well as 2023 and 2031 future milestone years. For the future years, staff requested that airports provide business as usual (BAU) and AQIP/AQIM emissions forecasts. The latter was meant to reflect emission reductions due to the implementation of the AQIP/AQIM measures. Staff also discussed the responsibilities of the airports and South Coast AQMD under the MOUs. Representatives from each of the commercial airports presented their preliminary AQIP/AQIM measures under development, and their schedule and public process for AQIP/AQIM/MOU adoption by their respective airport authority consistent with South Coast AQMD's schedule for a public hearing in late 2019.

The third Airports MOU Working Group meeting<sup>5</sup> focused primarily on the presentations made by airport representatives regarding more details on the development of their AQIPs/AQIMs. The presentations were largely focused on the proposed AQIP/AQIM measures and initiatives including preliminary targets being considered by the airports. Staff provided suggestions and comments on the draft AQIPs/AQIMs and encouraged airports to consider stringent performance targets for all non-aircraft sources that were technically feasible and cost-effective through airport programs (e.g., requirements, incentives). The airports re-iterated their commitments to further refine their draft AQIPs/AQIMs and also work with South Coast AQMD on developing draft MOUs through both the airport and South Coast AQMD's public processes.

The fourth Airports MOU Working Group meeting was held on October 15, 2019. At this meeting, staff presented the following items: draft AQIPs/AQIMs prepared by the airports, draft MOUs developed by South Coast AQMD and the airports, specific AQIP/AQIM measures with potential SIP creditable emissions reductions included in the MOUs, and potential SIP creditable emission reductions for MOU measures in 2023 and 2031, which represents South Coast AQMD's enforceable commitment. Each airport also provided the timeline for the MOU adoption according to its own public process. In addition, the airports' annual reporting requirements for GSE MOU measures, including the annual operating data and information on replaced GSE, were discussed. South Coast AQMD staff also conducted a public consultation meeting on October 10, 2019 at the South Coast AQMD headquarters. Responses to the comments received are incorporated into the staff report. Additional changes to the GSE MOU measures regarding the annual operating data and information on GSE being retired, sold, or relocated within the Basin were made based on comments received at the working group meeting and the public consultation meeting (refer to MOUs in Appendix A). The airport authorities will consider approval of the Draft MOUs with South Coast AQMD in October and November 2019.

---

<sup>4</sup> Held May 8, 2019.

<sup>5</sup> Held July 18, 2019.

The South Coast AQMD Governing Board will consider approval of the FBMSM for Commercial Airports at its December 6, 2019 meeting.

## **B. Regulatory Background**

This section provides a brief summary of the existing and proposed CARB and South Coast AQMD regulations affecting non-aircraft on-road and off-road mobile emission sources related to airport operations. In order for AQIP/AQIM emission reductions to be SIP creditable, these reductions have to be surplus to existing regulations.

### **South Coast AQMD's Fleet Rules**

South Coast AQMD's fleet rules apply to several vehicle categories operating at airports. Rule 1191, Clean On-Road Light- and Medium-Duty Public Fleet Vehicles, applies to all state and local government agencies located in the South Coast AQMD's jurisdiction, including state, regional, county, and city government departments and agencies, and any special districts such as water, air, sanitation, transit, and school districts, with 15 or more non-exempt light-duty vehicles. This regulation requires that these entities acquire low emission gasoline or alternative fuel vehicles when procuring new vehicles. Rule 1196, Clean On-Road Heavy-Duty Public Fleet Vehicles, is a similar regulation that applies to on-road heavy-duty vehicles with a gross vehicle weight of at least 14,000 pounds. It requires all applicable government agencies and special districts with fleets of 15 or more vehicles (including commercial airports), to acquire a gasoline, dual-fuel or alternative fueled engine or vehicle when purchasing or leasing a new vehicle. Airports and operators must also comply with Rule 1194, Commercial Airport Ground Access, which requires all public fleets providing passenger transportation services out of commercial airports to acquire low emission or alternative-fueled vehicles. This rule applies to passenger cars, light-duty trucks, and medium- and heavy-duty transit vehicle fleets of 15 or more vehicles. Passenger shuttle buses and taxi cabs under a contract or exclusive franchise serving airports must comply with this rule as well.

### **CARB GSE MOU**

In 2002, CARB executed an MOU with commercial airlines and cargo operators in the Basin for Ground Support Equipment (GSE). GSE is utilized for various functions at airports such as refueling aircraft, transporting cargo and luggage, and providing maintenance. The main objectives of the 2002 MOU were to have airlines meet a 2.65 g/bhp-hr hydrocarbon plus NOx performance target, convert at least 30% of the aggregate GSE fleet to electric, have at least 45% of new GSE purchases be electric, and reduce diesel GSE emissions by installing particle filters. The date to achieve these objectives was December 31, 2010. However, the MOU was terminated in 2006 because CARB's statewide regulations addressed many aspects of the GSE MOU.

### **CARB In-Use Off-Road Diesel-Fueled Fleets Regulation**

CARB requires emission reductions from existing off-road diesel-fueled vehicles through its statewide In-Use Off-Road Diesel-Fueled Fleets Regulation. The regulation applies to all off-road diesel vehicles with engines greater than 25 horsepower including diesel-powered GSE and other diesel off-road equipment and vehicles operated at the airports. The regulation imposes limits on idling, restricts the addition of older vehicles to fleets, and requires fleets to retire, replace or repower older engines to achieve progressively lower average emission rates, or

comply with the Best Available Control Technology (BACT) requirements. This rule requires mandatory reporting of applicable equipment to CARB through the Diesel Off-road On-line Reporting System (DOORS).<sup>6</sup>

### **CARB On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation**

CARB's regulation requires emission controls and replacements for existing diesel trucks and buses through its statewide On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation, commonly referred to as the Truck and Bus Regulation. Heavy-duty vehicles with a gross vehicle weight greater than 14,000 pounds are required to be retrofitted with diesel particulate filters based on truck model years and according to specified schedules. In addition, replacement of older heavy-duty vehicles is mandated based on a tiered schedule that began in 2015. By 2023, nearly all trucks and buses will be required to have model year 2010 engines or newer.

### **CARB Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation**

CARB's LSI regulation applies to off-road LSI engine forklifts, sweepers/scrubbers, industrial tow tractors, and airport ground support equipment operated within the State of California. Additionally, it applies only to vehicles with engines of at least 25 horsepower and 1.0 liter displacement that are part of fleets of four vehicles or more. The regulation requires that applicable fleets achieve specific fleet average emission levels (FAELs) for hydrocarbons and NOx. These standards became more stringent over time until reaching the lowest regulated FAEL in 2013. The regulation also mandates reporting of applicable equipment to CARB through DOORS.

### **CARB Zero-Emission Airport Shuttle Regulation**

CARB's Zero-Emission Airport Shuttle Regulation, adopted by the CARB Governing Board in June 2019, promotes the use of zero-emission ground transportation to and from airports in California. The regulation requires that at least 33%, 66%, and 100% of airport shuttle fleets be zero-emission vehicles by December 31, 2027, 2031 and 2035, respectively. It also requires fleet owners to report fleet information annually starting in 2022 and to have zero-emission certificates for 2026 and later model year vehicles.

### **CARB's Proposed Zero-Emission Airport Ground Support Equipment**

CARB is currently in the process of developing a zero-emission measure for GSE at airports in California. The proposed regulation is intended to advance GSE conversion to zero-emission technologies while accelerating the goals and requirements provided in the LSI Engine Fleet Requirements Regulation. CARB staff has is considering a preliminary target of 100% zero-emission GSE by 2032. The proposed regulation is scheduled for Board consideration in late 2020.

## **C. U.S. EPA's Requirements for SIP Credit**

In order for emission reductions from the AQIPs/AQIMs measures in the MOUs to be SIP creditable, which means the reductions can be relied upon in the attainment demonstration, these reductions need to meet the U.S. EPA's guidelines. These guidelines include requirements regarding U.S. EPA's integrity elements, federally enforceable backstop commitments, technical

---

<sup>6</sup> Available at [https://ssl.arb.ca.gov/ssldoors/doors\\_reporting/doors\\_login.html](https://ssl.arb.ca.gov/ssldoors/doors_reporting/doors_login.html)

support, funding, legal authority, public disclosure, and provisions to assess progress. Chapter 4 provides details on how these requirements are met for the AQIP/AQIM measures specified in the MOUs. The U.S. EPA's guidelines are briefly discussed below:

1. U.S. EPA's Integrity Elements – For emission reductions resulting from AQIP/AQIM measures to meet the Integrity Elements, they must be surplus, permanent, quantifiable, and enforceable. These four elements are briefly explained below.
  - i. Surplus  
Emission reductions are surplus if they are not otherwise required by or assumed in a SIP-related program (e.g., an attainment or reasonable further progress plan), any other adopted State or local air quality programs, a consent decree, or a federal rule designed to reduce emissions of a criteria pollutant or its precursors.
  - ii. Permanent  
Emission reductions are permanent if the reductions occur throughout the term stated in the airports' MOUs. The MOUs' terms are based on the 8-hour ozone National Ambient Air Quality Standards attainment dates of 2023 and 2031. Therefore, the emission reductions must continue through 2031.
  - iii. Quantifiable  
Emission reductions are quantifiable if they can be measured and supported by acceptable operating and technical data provided by the airports. The quantification must use well-established and publicly available calculation methods, including approved emission factors.
  - iv. Enforceable  
The emission reductions are enforceable if they are independently verifiable, program violations are defined, and if emission-related information is publicly available. The airports will be responsible for having specific procedures and mechanisms to ensure enforcement and implementation of the emission reduction measures identified in the MOUs.

2. Federal Enforceability

The enforceable commitment must include: (1) a commitment to monitor, assess, and regularly report on emission reductions achieved; and (2) a commitment to adopt and submit substitute measures to the U.S. EPA by specific dates if necessary to remedy any emission reduction shortfalls.

3. Technical Support

To explain how the emission reductions are translated into SIP credit and applied toward the attainment demonstration, documentation and technical analysis must be provided. This documentation should include a description of the assumptions used in estimating and tracking emissions and emissions reductions from affected sources. The level of information in the documentation should be sufficiently detailed so that the public can review and repeat the quantification of the emission benefits.

4. Funding

In the case that an incentive funding program is utilized to achieve emission reductions, adequate funding for the project needs to be available to show that the funds are committed already or are reasonably expected to be available to generate committed reductions.

5. Legal Authority to Administer the Program

In the case of incentive programs, the legal authority to administer these programs needs to be identified by South Coast AQMD or the implementing authority.

6. Public Disclosure and Tracking Results

The emission reductions data and other pertinent information related to the MOU measures (i.e., emissions inventory, emission reduction benefits, and implementation of measures) must be fully accessible to the public and U.S. EPA in accordance with the requirements of CAA section 114 and U.S. EPA's implementing regulations in 40 CFR 2.301.

Chapter 2 provides a summary of the AQIPs/AQIMs developed by five commercial airports as part of this MOU process. In Chapter 3, a summary of the MOUs between South Coast AQMD and the five commercial airports is provided including the AQIP/AQIM measures for each airport that are potentially eligible for SIP credit. Chapter 4 presents the proposed SIP creditable emission reductions (quantified by South Coast AQMD staff) associated with the implementation of the AQIP/AQIM measures in the MOUs including South Coast AQMD's enforceable commitments and a demonstration of how the emission reductions from these measures satisfy U.S. EPA's requirements. Appendix A includes the MOUs between the South Coast AQMD and the five commercial airports. Appendix B includes the SIP credit calculation methodology. The airports AQIPs/AQIMs are posted on South Coast AQMD's website at <http://www.aqmd.gov/airportsmous>.

## **Chapter 2: Air Quality Improvement Plans/Measures**

---

Introduction

Los Angeles International Airport (LAX) AQIM

John Wayne Airport (JWA) AQIP

Long Beach Airport (LGB) AQIP

Ontario Airport (ONT) AQIP

Burbank Airport (BUR) AQIP



## Introduction

As part of the MOU process, each airport has developed its own Air Quality Improvement Plan (AQIP) or Air Quality Improvement Measures (AQIM). The AQIPs/AQIMs are the airports' comprehensive plans to reduce emissions from non-aircraft mobile sources related to airport operations. Specific measures and initiatives for the applicable sources are identified by each airport and included in the airports' AQIPs/AQIMs. The distinction between measures and initiatives varies among the airports. In general, a measure represents a program in which the airport agrees to a well-defined course of action with known emission reductions, while an initiative represents an objective that the airport intends to pursue, but the emission reductions are not readily quantifiable.

The AQIPs/AQIMs include the 2017 baseline emissions as well as emissions forecasts in 2023 and 2031 under business as usual (BAU) and AQIP/AQIM implementation scenarios. The emission reduction benefits for the AQIP/AQIM measures presented in this chapter are estimates provided by the airports based on the difference between the BAU and AQIP/AQIM implementation scenarios. Although the airports have provided these estimated benefits, they are only committing to achieve the performance targets associated with these measures. Some of the measures do not have quantified emission reductions because they are either not well defined or they only include general goals or guidelines in lieu of specific performance targets.

The AQIPs/AQIMs also include implementation mechanisms for the measures and initiatives, which vary depending on the type of measure/initiative. For example, GSE measures establish airport-wide performance targets to be achieved by GSE operators and tenants. Other measures affect vehicles or equipment that are entirely under the airport's authority. An incentive-based approach is also included in one of the AQIPs/AQIM.

This chapter provides summaries of the individual AQIPs or AQIMs including a brief description of each airport, baseline and BAU emissions inventories, a brief overview of the AQIP/AQIM measures, estimated emission benefits and AQIP/AQIM measures that were determined by South Coast AQMD to be eligible for SIP credit (i.e., emissions for the source category covered by the AQIP/AQIM measures were specifically identified in the SIP inventory and surplus reductions for the measures were quantifiable). The AQIPs/AQIMs for the five commercial airports are provided on South Coast AQMD's website at <http://www.aqmd.gov/airportsmous>.

## A. Los Angeles International Airport (LAX) AQIM

### Background

Los Angeles International Airport (LAX), located at the western edge of the City of Los Angeles, is owned and operated by Los Angeles World Airports, which is a department of the City of Los Angeles. It is surrounded by Westchester, Inglewood, El Segundo, and the Pacific Ocean. LAX is the primary international airport serving the City and County of Los Angeles and surrounding metropolitan areas. LAX covers approximately 3,500 acres of land and has four runways.

LAX is the fourth busiest airport in the world and the second busiest in the United States. LAX served more than 87.5 million passengers in 2018 and currently offers an average of 700 daily nonstop flights to 109 cities in the U.S. and 1,281 weekly nonstop flights to 93 markets in 47 countries on 69 commercial airlines. LAX ranks 10th in the world in terms of air cargo, with more than 2.4 million tons of air cargo processed in 2018. In 2018, LAX handled over 700,000 total aircraft operations (i.e., landing and take-off).

### Baseline and BAU Emissions Inventories

The non-aircraft mobile source emissions inventory included in the AQIM is summarized by source category in Table 2.1 and covers GSE and traffic and parking (including on-airport and regional emissions).

Table 2.1. Baseline and BAU Non-Aircraft Mobile Source Emissions for LAX by Source Category (NOx, tons per year)

Category	2017	2023	2031
<b>GSE</b>	184.93	150.69	121.31
<b>Traffic and Parking</b>	1,402.63	497.80	389.50
<b>Total</b>	1,587.56	648.49	510.81

### List of AQIM Measures

LAX’s AQIM includes 11 measures affecting various source categories. A summary list of LAX’s AQIM measures is presented in Table 2.2. The measures are grouped into two categories – GSE, and traffic and parking.

There are two measures that affect GSE. The first is based on the airport’s GSE Emissions Reduction Policy, which establishes airport-wide GSE fleet average emission rates. The other measure is an incentive fund to accelerate the turnover of the GSE fleet to zero-emission equipment. Nine measures target the traffic and parking category. The first measure is the LAX Alternative Fuel Vehicle Policy which requires that medium and heavy duty vehicles be 13 years old or newer in order to operate at LAX, and requires that vehicles meet LEV III or the optional low-NOx standard. The Alternative Fuel Vehicle Incentive Program creates a \$500,000 fund to incentivize the conversion of 20 heavy-duty trucks to zero or near zero-emissions. The Clean Fleet Program for LAWA’s Vehicle Fleet has three elements. For LAWA’s light duty fleet, 25% and 100% of LAWA’s sedan fleet must be electric by 2023 and 2031, respectively. LAWA’s medium and heavy-duty vehicles must meet the LAX Alternative Fuel Vehicle Policy requirements. Additionally, LAWA-owned shuttle buses will be converted to electric by the end of 2030. Traffic and parking is covered by an additional four measures, which reduce vehicle miles traveled and vehicle idle time. These measures include improvements to public transit with connections to airport terminals, the installation of smart parking systems, and continuation of the LAX FlyAway and LAWA employee rideshare programs.

The corresponding emission benefits for the AQIM measures with quantifiable emission reductions in 2023 and 2031 are provided in Table 2.2.

Table 2.2. Summary of AQIM Measures and Initiatives for LAX

<b>Measure Type <sup>1</sup></b>	<b>Source Category</b>	<b>Description</b>	<b>2023 AQIM Benefit (NO<sub>x</sub>, tpy) <sup>2</sup></b>	<b>2031 AQIM Benefit (NO<sub>x</sub>, tpy) <sup>2</sup></b>	<b>SIP creditable (Y/N)</b>
<b>M</b>	GSE	Ground Support Equipment (GSE) Emissions Reduction Policy - Require that the GSE fleet achieve average emission factors for Hydrocarbon and NO <sub>x</sub> combined of 1.8 g/hp-hr (2023) and 1.0 g/hp-hr (2031)	56.17	86.16	Y
<b>M</b>	GSE	GSE Incentive Program - \$500,000 fund allocated to incentivize zero-emission GSE by 2023	NQ	NQ	N
<b>M</b>	Traffic and Parking	LAX Alternative Fuel Vehicle Policy – Third party medium and heavy duty vehicles to utilize clean-fueled low-emission engines			N
<b>M</b>	Traffic and Parking	LAX Alternative Fuel Vehicle Policy – LAWA-owned medium and heavy duty vehicles to utilize clean-fueled low-emission engines	6.98	9.18	N
<b>I</b>	Traffic and Parking	Alternative Fuel Vehicle Incentive Program - \$500,000 fund allocated to incentivize the conversion of 20 heavy-duty vehicles to zero or near-zero emission trucks by 2021			Y
<b>I</b>	Traffic and Parking	LAWA Clean Fleet Program - 20% (2023) and 100% (2031) ZE buses	0.35	1.73	Y
<b>I</b>	Traffic and Parking	LAWA Clean Fleet Program – 25% (2023) and 100% (2031) EV light-duty sedans	0.01	0.03	N
<b>I</b>	Traffic and Parking	LAX Employee Rideshare Program - Continue operation of LAWA employee rideshare program	NQ	NQ	N
<b>I</b>	Traffic and Parking	LAX FlyAway Program – Continue operation	NQ	NQ	N

Measure Type <sup>1</sup>	Source Category	Description	2023 AQIM Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	2031 AQIM Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	SIP creditable (Y/N)
I	Traffic and Parking	LAX Landside Access Modernization Program - Public transit improvements including consolidated car rental, parking lot, and Metro connection	3.99	NQ	N
I	Traffic and Parking	Smart Parking Systems - Improve traffic flow and reduce idling in parking lots	0.24	0.21	N

<sup>1</sup> A measure (M) is an air quality improvement program that has been or will be adopted by LAWA’s Board of Airport Commissioners and typically applies to LAWA tenants or third parties. An initiative (I) is a statement of airport policy and typically applies to LAWA-owned or controlled operations.

<sup>2</sup> NO<sub>x</sub> emission reduction benefit as determined by the airport.

NQ = Not Quantifiable

**B. John Wayne Airport (JWA) AQIP**

**Background**

John Wayne Airport (JWA), which is owned and operated by the County of Orange, is the only commercial service airport in Orange County, California. It is located approximately 35 miles southeast of Los Angeles, between the cities of Costa Mesa, Irvine, and Newport Beach. The service area includes more than three million people within the 34 cities and unincorporated areas of Orange County.

In 2018, JWA served approximately 10.7 million passengers. A maximum of 85 Class A Average Daily Departures (ADDs) are currently allowed under a 2014 settlement agreement between JWA, the City of Newport Beach and two community groups. As part of the agreement, commercial aircraft activity at the Airport is limited to 10.8 million passengers (MAP), 11.8 and 12.2, for the years 2020, 2025 and 2030, respectively. If the number of passengers served in any one calendar year, between January 1, 2021 through December 31, 2025, is within 5 percent of 11.8 MAP, then the annual passenger level will be permitted to increase to 12.5 MAP through December 31, 2030. The average daily departures (ADDs) for Class A aircraft at the Airport are limited to 85 ADDs in 2020 and 95 ADDs in 2025 and 2030; and up to four cargo ADDs.

**Baseline and BAU Emissions Inventories**

The non-aircraft mobile source emissions inventory included in the AQIP is summarized by source category in Table 2.3 and covers GSE, fuel trucks, on-road mobile and off-road mobile sources, and passenger traffic (only including on-airport emissions). The on-road category incorporates emissions related to airport shuttles, the airport-owned on-road fleet, and delivery trucks. The off-road category incorporates emissions related to the airport-owned off-road fleet. Passenger and employee traffic, which only considers on-airport roadways and parking lots, includes passenger vehicles, taxis, and Transportation Network Companies.

Table 2.3. Baseline and BAU Non-Aircraft Mobile Source Emissions for John Wayne Airport by Source Category (NOx, tons per year)

Category	2017	2023	2031
<b>GSE</b>	22.28	15.07	9.98
<b>Fuel Trucks</b>	3.69	1.70	1.51
<b>On-road</b>	0.63	0.57	0.56
<b>Off-road</b>	0.13	0.06	0.03
<b>Passenger and Employee Traffic</b>	0.64	0.37	0.26
<b>Total</b>	27.37	17.77	12.34

### List of AQIP Measures

John Wayne Airport’s AQIP includes 13 measures and initiatives covering various source categories. A summary list of JWA’s AQIP measures and initiatives is presented in Table 2.4. The measures are grouped into five categories – GSE, fuel trucks, on-road mobile, off-road mobile, and passenger traffic. The categories are consistent with the ones listed in the emissions inventory.

The GSE measure establishes airport-wide fleet average emission rates. Another measure calls for the installation of a jet fuel pipeline, which will eliminate routine commercial passenger jet fuel truck deliveries. Three other measures affect the on-road mobile source category. These measures involve shifting the time of concession deliveries to the night, phasing out the existing Compressed Natural Gas (CNG) shuttle fleet in favor of electric vehicles, and introducing a greater percentage of low emission or alternative fueled vehicles in the JWA on-road fleet. The Concessions Nighttime Delivery Policy will require, where feasible, that deliveries are performed from 11 pm to 6 am. The JWA Owned Vehicle Clean Fleet Policy will require that vehicles and equipment with greater than 50 HP engines be replaced with new electric, alternative fuel, or hybrid vehicles through a replacement process of existing vehicles. Finally, the Parking Shuttle Bus Electrification Measure will require that 50% and 80% of the CNG shuttle buses be replaced with electric buses in 2023 and 2031, respectively. JWA may choose to keep CNG shuttle buses, which would be for standby and emergency use. Currently, there are twelve CNG shuttle buses.

The bulk of the measures benefit passenger traffic emissions by reducing vehicle miles traveled and vehicle idling time. These involve smart parking, congestion reduction, re-matching Transportation Network Company (TNC) rides to increase efficiency, and facilitating public transit access. The Smart Parking Features measure requires the installation of smart parking features to facilitate traffic movement and reduce idling. The Congestion and Passenger Vehicle Reduction measure is already implemented and has resulted in congestion reduction with existing holding lots for taxis and passenger pick-up vehicles. The TNC Vehicle Miles Traveled Reduction Policy will designate pickup and drop-off locations and establish a re-matching system. Finally, the Passenger Transportation Mode Shifts initiative will assign a liaison to work with the Orange County Transportation Agency (OCTA) to increase public transit access. In

addition, the feasibility of installing EV charging infrastructure for transit vehicles and JWA employee rideshare programs will be explored.

Table 2.4. Summary of AQIP Measures and Initiatives for John Wayne Airport

Measure Type <sup>1</sup>	Source Category	Description	2023 AQIP Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	2031 AQIP Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	SIP creditable (Y/N)
<b>M</b>	GSE	Ground Support Equipment (GSE) - Require that the GSE fleet achieve average emission factors for NO <sub>x</sub> of 1.7 (2023) and 0.9 (2031) g/bhp-hr	4.80	3.92	Y
<b>M</b>	Fuel trucks	Jet Fuel Delivery Trucks – Install a jet fuel pipeline by the end of 2019 and eliminate routine jet fuel delivery trucks by 2023	1.70	1.51	Y
<b>M</b>	On-road	Concessions Nighttime Delivery Policy - Require, where feasible, that deliveries are performed from 11 pm to 6 am	0.02	0.02	N
<b>M</b>	On-road	JWA Owned Vehicle Clean Fleet Policy - Replace vehicles with >50 HP engines with zero emission or hybrid vehicles	0.001	0.008	N
<b>M</b>	On-road	Parking Shuttle Bus Electrification - Replace 50% (2023) and 80% (2031) of existing 12 CNG buses with electric buses	0.16	0.29	Y
<b>M</b>	Off-road	Clean Construction Program - Require that heavy-duty diesel-fueled construction equipment meets Tier 4 standards	NQ	NQ	N
<b>I</b>	Passenger and Employee Traffic	Taxi Clean Fleet Policy - Codify Rule 1194 into taxi operating agreements to encourage adoption of cleaner technologies	NQ	NQ	N
<b>M</b>	Passenger and Employee Traffic	Smart Parking Features - Install smart parking features to facilitate traffic movement and reduce idling	0.09	0.08	N
<b>I</b>	Passenger and Employee Traffic	Electric Vehicle Charging Infrastructure - Increase the number of EV chargers in passenger and employee parking lots	NQ	NQ	N

Measure Type <sup>1</sup>	Source Category	Description	2023 AQIP Benefit (NOx, tpy) <sup>2</sup>	2031 AQIP Benefit (NOx, tpy) <sup>2</sup>	SIP creditable (Y/N)
<b>I</b>	Passenger and Employee Traffic	Passenger Transportation Mode Shifts - Assign a liaison to work with OCTA to facilitate public transit access and explore feasibility of installing EV charging infrastructure for transit vehicles	NQ	NQ	N
<b>M</b>	Passenger and Employee Traffic	TNC Vehicle Miles Traveled Reduction Policy - Designate pickup/drop-off locations and establish a re-matching system	0.06	0.03	N
<b>I</b>	Passenger and Employee Traffic	Orange County Employee Rideshare Program - Continue implementation of OC Rideshare	0.003	0.002	N
<b>M</b>	Passenger and Employee Traffic	Congestion and Passenger Vehicle Reduction - Reduce congestion with existing holding lots for standby vehicles (passenger and taxi)	0.03	0.02	N

<sup>1</sup> A measure (M) represents a program, policy, or procedure that is anticipated to result in emission reductions. An initiative (I) represents a program, policy, or procedure with less certain emission reductions.

<sup>2</sup> This is the NOx emission reduction benefit as determined by the airport.  
NQ = Not Quantifiable

### C. Long Beach Airport (LGB) AQIP

#### Background

Long Beach Airport (LGB), which is owned and operated by the City of Long Beach, covers 1,166 acres and has five runways. It is one of the world's busiest airports in terms of general aviation activity. In 2018, LGB served 4 million passengers, with approximately 45 daily commercial departures. LGB operations are governed by a noise reduction ordinance that restricts certain activities such as engine run-ups, missed approaches, and hours of operation. The ordinance also limits the total number of commercial flights per day.

#### Baseline and BAU Emissions Inventories

Table 2.5 presents the non-aircraft mobile source emissions inventory included in the AQIP by source category including GSE, construction, and traffic and parking (including on-airport and regional emissions). Traffic and parking includes passenger cars, taxis, limos, shuttles, buses, and cargo trucks.

Table 2.5. Baseline and BAU Non-Aircraft Mobile Source Emissions for Long Beach Airport by Source Category (NOx, tons per year)

<b>Category</b>	<b>2017</b>	<b>2023</b>	<b>2031</b>
<b>GSE</b>	16.78	13.23	10.54
<b>Construction</b>	2.91	8.59	2.91
<b>Traffic and Parking</b>	51.80	24.20	14.99
<b>Total</b>	71.49	46.02	28.44

### List of AQIP Measures

Long Beach Airport’s AQIP includes 7 measures and initiatives covering various source categories. A summary of LGB’s measures is presented in Table 2.6. The measures are grouped into five categories – GSE, construction, traffic and parking, and other. Measures and initiatives that did not fall into any defined category (e.g. solar panel installation, LEED building certification) are labeled “other” in the summary table.

The GSE measure is based on the airport’s GSE Emission Reduction Policy, which establishes airport-wide GSE fleet emission rates. One measure involves a transition of the airport-owned fleet to low emission or alternative fueled vehicles. The target is to achieve 100% light duty compliance by 2023, and 75% compliance for medium and heavy duty by 2023 and 100% by 2031. Construction activities are targeted in a measure that will ensure the use of only the cleanest off-road equipment (e.g., compliance with U.S. EPA Tier 4). Two additional measures impact passenger traffic and will include a TNC re-match system, with designated pickup and drop-off locations, and the possible expansion of EV charging capabilities. The “other” category measures require a minimum of LEED Silver certification for new buildings and the installation of a solar panel array.



Table 2.6. Summary of AQIP Measures and Initiatives for Long Beach Airport

Measure Type <sup>1</sup>	Source Category	Description	2023 AQIP Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	2031 AQIP Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	SIP creditable (Y/N)
M	GSE	Ground Support Equipment Emissions Reduction Policy - Require that the GSE fleet achieve average emission factors for NO <sub>x</sub> of 0.93 (2023) and 0.44 (2031) g/bhp-hr	0.93	4.06	Y
M	Construction	Clean Construction Policy - Tier 4 compliance phase-in with full implementation in 2031	NQ	NQ	N
M	On-road	Airport-Owned Clean Fleet Policy - Transition to SULEV or alternative fuel vehicles. Light duty 100% by 2023; medium and heavy duty 75% by 2023, 100% by 2031	0.03	0.06	N
I	Traffic and Parking	Electric Vehicle Charging Infrastructure Initiative - Assess feasibility of equipping 2% of parking spaces with EVSE	NQ	NQ	N
I	Traffic and Parking	TNC Rematch Initiative - Designate pickup/drop-off locations with re-match system	NQ	NQ	N
M	Other	Sustainable Design Policy - LEED Silver minimum for Terminal Improvements Project	NQ	NQ	N
M	Other	Renewable Energy Policy - Implement solar power system by the end of 2020	NQ	NQ	N

<sup>1</sup> A measure (M) represents a program in which the airport agrees to a well-defined course of action. An initiative (I) represents an objective that the airport seeks to achieve but is less well-defined.

<sup>2</sup> This is the NO<sub>x</sub> emission reduction benefit as determined by the airport.

NQ = Not Quantifiable

## D. Ontario Airport (ONT) AQIP

### Background

Ontario Airport (ONT), which is owned and operated by the Ontario International Airport Authority, is located 35 miles east of Los Angeles in the Inland Empire and covers 1,700 acres. ONT's service area includes a population of six million people in San Bernardino and Riverside counties, and portions of Orange and Los Angeles counties. In 2018, the airport served

approximately 5.1 million passengers with 60 average daily departures. In addition to commercial passenger flights, ONT also serves cargo flights, with approximately 650,000 tons of freight processed annually.

### Baseline and BAU Emissions Inventories

Table 2.7 presents the non-aircraft mobile source emissions inventory included in the AQIP by source category including GSE, fuel and crash trucks, airport-owned vehicles, delivery trucks, and passenger traffic (including on-airport and regional emissions). Crash trucks are designed and equipped to rescue victims in an air crash. The fuel truck category accounts for emissions from refueling trucks operating on the tarmac. The crash truck inventory was compiled based on input received from the Ontario Fire Department. The Ontario International Airport Authority (OIAA) and maintenance vehicle category includes emissions from on-road vehicles and maintenance trucks driven by airport staff or contractors. The delivery truck category accounts for emissions from trucks servicing the commercial terminals. Passenger traffic considers regional travel.

Table 2.7. Baseline and BAU Non-Aircraft Mobile Source Emissions for Ontario Airport by Source Category (NOx, tons per year)

<b>Category</b>	<b>2017</b>	<b>2023</b>	<b>2031</b>
<b>GSE</b>	103.02	91.10	79.84
<b>Fuel Trucks</b>	2.21	1.98	0.60
<b>Crash Trucks</b>	7.45	7.45	7.45
<b>OIAA and Maintenance Vehicles</b>	1.37	0.81	0.52
<b>Delivery Trucks</b>	0.72	0.30	0.35
<b>Passenger Traffic</b>	39.20	20.96	12.74
<b>Total</b>	153.97	122.60	101.50

### List of AQIP Measures

Ontario Airport’s AQIP includes 9 measures and initiatives covering various source categories. A summary of the measures is presented in Table 2.8. The measures are grouped into five categories – GSE, fuel trucks, on-road mobile, off-road mobile, passenger traffic, and other. Measures and initiatives that did not fall into any defined category (e.g. solar panel installation, LEED building certification) are labeled “other” in the summary table.

The GSE measure is based on the airport’s GSE Policy, which establishes stringent airport-wide fleet average emission rates. Three measures affect the off-road portion of the crash trucks, and OIAA and maintenance categories, and they involve crash truck replacement, reducing the size of the airport maintenance fleet, and ensuring the use of only the cleanest off-road equipment for construction (e.g., compliance with U.S. EPA Tier 4). The Crash Truck Replacement measure will require the replacement of 7 out of 12 vehicles in the fire department fleet including four crash trucks. The new crash trucks will be Tier 4 compliant. Two measures, the Airport Fleet Policy and the Sally Port, affect the on-road portion of the OIAA and maintenance category.

These measures involve a transition of the airport-owned fleet to low emission or alternative fueled vehicles and the creation of a centralized delivery location in lieu of terminal loading docks, which is anticipated to reduce vehicle miles travelled. Another measure will reduce passenger traffic emissions by expanding EV charging capability. Finally, the CalGreen and LEED Silver Requirement affect the “other” category and will require new buildings to meet green building standards.

Table 2.8. Summary of AQIP Measures and Initiatives for Ontario Airport

<b>Measure Type <sup>1</sup></b>	<b>Source Category</b>	<b>Description</b>	<b>2023 AQIP Benefit (NO<sub>x</sub>, tpy) <sup>2</sup></b>	<b>2031 AQIP Benefit (NO<sub>x</sub>, tpy) <sup>2</sup></b>	<b>SIP creditable (Y/N)</b>
<b>M</b>	GSE	GSE Policy - Require that the GSE fleet achieve average emission factors for NO <sub>x</sub> are 2.20 g/hp-hr (2023) and 1.00 g/hp-hr (2031)	22.66	46.03	Y
<b>M</b>	Fuel Trucks	Fuel Truck Operations - Addition of a second jet fuel loading rack to reduce distance travelled	NQ	NQ	N
<b>M</b>	Off-road	Crash Truck Replacement - Replace 7 of 12 vehicles in the fire department fleet, including 4 crash trucks, with Tier 4 compliant engines	3.26	3.26	N
<b>M</b>	On-road	Airport Fleet Policy - Gradually replace vehicles with CNG, hybrid, or electric. This measure is coupled to the following measure	0.05	0.05	N
<b>M</b>	Off-road	Maintenance Truck Reduction - Reduce size of maintenance fleet from 28 to 7 vehicles			N
<b>M</b>	On-road	Sally Port - Centralized delivery location in lieu of terminal loading docks	NQ	NQ	N
<b>M</b>	Off-road	Construction Equipment Policy - Require, where feasible, that contractors use Tier 4 equipment	NQ	NQ	N
<b>I</b>	Other	CalGreen and LEED Silver Requirement - Ensure future buildings meet CALGreen Title 24 regulations	NQ	NQ	N
<b>I</b>	Passenger traffic	EV Infrastructure in Passenger Parking Lots - Expand EV charging availability	NQ	NQ	N

<sup>1</sup> A measure (M) contains concrete goals that result in quantifiable emission reductions. An initiative (I) is a policy that provides infrastructure, incentives, or other tools that promote emission reductions, but does not contain specific requirements.

<sup>2</sup> This is the NOx emission reduction benefit as determined by the airport.

NQ = Not Quantifiable

## E. Burbank Airport (BUR) AQIP

### Background

Burbank Airport (BUR) is owned by the Burbank-Glendale-Pasadena Airport Authority and is operated by TBI Airport Management. It is located approximately 13 miles northwest of Los Angeles and occupies 555 acres with 14 passenger gates. In 2018, BUR served over 5 million passengers, processed 109 million pounds of cargo, and logged over 130,000 total aircraft operations.

### Baseline and BAU Emissions Inventories

Table 2.9 presents the non-aircraft mobile source emissions inventory included in the AQIP by source category including GSE, construction, and traffic and parking (including on-airport and regional emissions). Traffic and parking accounts for passenger vehicles, taxis, TNC, and hotel and airport shuttle rides.

Table 2.9. Baseline and BAU Non-Aircraft Mobile Source Emissions for Burbank Airport by Source Category (NOx, tons per year)

Category	2017	2023	2031
GSE	17.85	17.46	16.72
Construction	2.37	7.76	2.37
Traffic and Parking	22.71	11.84	7.64
<b>Total</b>	<b>42.93</b>	<b>37.06</b>	<b>26.73</b>

### List of measures

Burbank Airport’s AQIP includes 9 measures and initiatives covering various source categories. A summary of the measures is presented in Table 2.10. The measures are grouped into four categories, which include GSE, construction, and passenger traffic, and other. Measures and initiatives that did not fall into any defined category (e.g. solar panel installation, LEED building certification) are labeled “other” in the summary table.

The GSE measure is based the airport’s GSE Emissions Policy, which establishes airport-wide fleet average emission rates. One measure affects the construction category by ensuring the use of only the cleanest equipment. In addition to compliance with U.S. EPA Tier 4 for off-road sources, this measure requires the use of 2010 or newer model year engines for on-road construction vehicles. The Airport-Owned Clean Fleet policy, benefits traffic and parking and involves a transition of the airport-owned fleet to zero-emission vehicles, with 100% EV light duty and shuttle buses by 2023 and 2031, respectively. Four additional measures are aimed at traffic and parking: the Regional Intermodal Transportation Center, the Burbank Airport Employee Ride Share Policy, the Burbank-Metrolink Shuttle Connection Program, and the Electrical Charging Infrastructure Initiative. The transportation center currently offers

consolidated parking, car rental, and access to public transit. The Burbank-Metrolink Shuttle Connection Program will promote connections to Metrolink trains in an effort to increase ridership. The Electrical Charging Infrastructure Initiative will aim to equip 5% of parking lot spaces with EV chargers by 2031. Finally, the “other” category is affected by two measures which involve an existing LEED Platinum certified hangar and the installation of a solar panel array.

Table 2.10. Summary of AQIP Measures and Initiatives for Burbank Airport

Measure Type <sup>1</sup>	Source Category	Description	2023 AQIP Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	2031 AQIP Benefit (NO <sub>x</sub> , tpy) <sup>2</sup>	SIP creditable (Y/N)
<b>M</b>	GSE	Ground Support Equipment Emissions Policy - Require that the GSE fleet achieve average emission factors for NO <sub>x</sub> of 1.66 g/hp-hr (2023) and 0.74 g/hp-hr (2031)	0.70	8.70	Y
<b>M</b>	Construction	Clean Construction Policy - Require U.S. EPA 2010 standard for on-road, Tier 4 for off-road. Use grid power where available	1.55	NQ	N
<b>I</b>	Traffic and parking	Airport-Owned Clean Fleet - 100% EV light-duty by 2023; medium and heavy-duty 50% EV by 2031; 50% (2023) and 100% (2031) EV buses	0.04	0.09	Y
<b>I</b>	Traffic and parking	Electrical Charging Infrastructure - 5% of parking spaces equipped by 2031	NQ	NQ	N
<b>I</b>	Traffic and parking	The Regional Intermodal Transportation Center - Consolidated parking, car rental, and access to public transit			N
<b>I</b>	Traffic and parking	Burbank-Metrolink Shuttle Connection Program – Promote Metrolink-Shuttle programs to increase participation	0.33	0.21	N
<b>M</b>	Traffic and parking	Burbank Airport Employee Ride Share Policy – Increase ridership by 3% (2023) and 6% (2031)	0.04	0.05	N
<b>I</b>	Other	Replacement Terminal Project - CalGreen/LEED Silver terminal construction. LEED Platinum hanger	NQ	NQ	N
<b>I</b>	Other	RITC Solar Facility - Install 2.2 MWh solar array	NQ	NQ	N

<sup>1</sup> A measure (M) represents a program in which the airport agrees to a well-defined course of action. An initiative (I) represents an objective that the airport seeks to achieve but is less well-defined.

<sup>2</sup> This is the NO<sub>x</sub> emission reduction benefit as determined by the airport.

NQ = Not Quantifiable

## **Chapter 3: Memoranda of Understanding**

---

Introduction

General MOU Sections Applicable to All Airports

Airport Specific MOU Sections

## Introduction

This chapter provides a summary of the main elements contained in the five MOUs between South Coast AQMD and each of the commercial airports. The MOUs represent voluntary agreements between South Coast AQMD and the airports to implement the AQIP/AQIM measures that are eligible for SIP credit, as identified in Chapter 2. The airports agree to implement the measures and annually report progress to South Coast AQMD. South Coast AQMD commits to quantify the emission reductions, and prepare and submit the necessary documentation to U.S. EPA for inclusion of the emission reductions into the SIP. South Coast AQMD's commitment also includes an enforceable commitment to achieve the emission reductions associated with implementation of AQIP/AQIM measures in the MOUs.

### A. General MOU Sections Applicable to All Airports

The MOUs contain sections common to all airports, with the primary difference being the attached schedules, which will be discussed in detail later. This section will summarize the common elements including the purpose, term, and applicability of the MOUs, and airport and South Coast AQMD responsibilities.

#### MOU Purpose

The central objective of the AQIPs/AQIMs and MOUs is to help achieve NO<sub>x</sub> reductions necessary for attainment of the 1997 and 2008 8-hour ozone standards in 2023 and 2031, respectively. The MOUs describe the process of how South Coast AQMD and the airports intend to quantify the emission reduction benefits associated with the implementation of AQIP/AQIM measures eligible for SIP credit. For each of these measures, the specific implementation, monitoring, and reporting mechanisms are presented in the schedules attached to the MOUs. The schedules provide technical details including metrics and performance targets, the timeline for implementation, and annual reporting by the airport to South Coast AQMD. The emission reductions achieved through the MOUs will be credited into the SIP to the extent that they satisfy U.S. EPA's integrity elements (i.e. quantifiable, surplus, permanent, and enforceable). In the event that the actual achieved reductions fall short of those defined in Chapter 4, South Coast AQMD will be solely responsible for ensuring that the remaining reductions are achieved.

#### MOU Term

The MOUs will remain in effect from the date of execution through December 31, 2032, unless terminated earlier. South Coast AQMD or the airports may choose to terminate the MOU by providing written notice to the other party at least 90 days in advance of the specified termination date. South Coast AQMD and the airports agree to work together to resolve any issues and negotiate an updated MOU. However, if no agreement is reached, the MOU will terminate on the date specified in the initial notice.

#### MOU Applicability

The MOUs include the airports' specific AQIP/AQIM measures that are deemed eligible for SIP credit and explicitly exclude sources that are not identified as an emission source in the



AQIP/AQIM. Furthermore, the MOUs do not establish an emissions cap or any other facility-wide limit for any pollutant for the airports.

### **Airport Responsibilities**

The airports' implementation of the AQIP/AQIM measures is voluntary, thereby qualifying the airports for incentives through various programs (e.g., FAA Voluntary Aviation Low Emissions Program). Nevertheless, the airports agree to implement the AQIP/AQIM measures eligible for SIP credit and monitor and report on the implementation of these measures. Details regarding the implementation, monitoring, and reporting of these measures are provided in the schedules attached to the MOUs. The schedules provide technical details including metrics and performance targets, the timeline for implementation, and annual reporting requirements. Where feasible, the airports agree to provide monetary or non-monetary incentives for mobile sources included in the AQIP/AQIM. Additionally, the airports agree to support grant funding efforts.

### **South Coast AQMD Responsibilities**

South Coast AQMD's responsibility is to quantify the emission reduction benefits associated with implementation of the AQIP/AQIM measures in the MOUs that are eligible for potential SIP credit. The quantification of the emission reductions is based on the AQIP/AQIM measures and their supporting calculations provided by the airports as well as the SIP credit calculation methodology developed by South Coast AQMD (Appendix B). South Coast AQMD will provide a SIP update to U.S. EPA for the prospective SIP credit for these measures for the 2023 and 2031 attainment years. South Coast AQMD will also track the implementation of these measures based on the annual reports provided by the airports as specified in the schedules and submit the necessary documentation to U.S. EPA. All emissions related data and other pertinent information will be made fully accessible to the public.

South Coast AQMD is also responsible for the federally enforceable commitments and any potential emission reduction shortfall associated with implementation of the AQIP/AQIM measures in the MOUs. In the event that the actual reductions from the AQIP/AQIM measures in the MOUs fall short of those defined in Chapter 4, South Coast AQMD will be solely responsible for ensuring that the remaining reductions are achieved by developing and providing substitute measures to U.S. EPA. In such events, South Coast AQMD will work together with the airports and other stakeholders through a public process to consider potential new or enhanced programs, or better efforts to quantify existing programs.

South Coast AQMD may pursue additional funding programs and incentives, at the Governing Board's discretion, in order to accelerate the turnover of equipment to clean technology.

## **B. Airport Specific MOU Sections**

The schedules are documents attached to the MOU that describe the metrics and performance targets of the AQIP/AQIM measures, the timeline for implementation, and the details of the annual reports prepared by the airports. One schedule is attached for each AQIP/AQIM measure

that is eligible for SIP credit. In general, the airports’ commitments include implementing the AQIP/AQIM measures in the MOUs and submitting annual reports by June 1 of each year, beginning in 2021. South Coast AQMD will quantify the actual emission reductions achieved each year based on the annual reports provided by the airports to track progress toward achieving the emission reductions in 2023 and 2031. South Coast AQMD will also ensure that the relevant emissions data is accessible to the public and submitted to U.S. EPA. The schedules for all airports are summarized below.

### Los Angeles International Airport

The MOU schedules/measures<sup>7</sup> for LAX are summarized in Table 3.1.

Table 3.1. MOU Measures for LAX

Schedule	Title and Program Description
1	Ground Support Equipment Emissions Reduction Policy - Require that all ground support equipment operators at LAX achieve fleet average NOx + Hydrocarbon emission factors of 1.8 and 1.0 grams per brake horsepower-hour in 2023 and 2031, respectively.
2	LAX Alternative Fuel Vehicle Incentive Program - Implement an incentive program that will distribute up to \$500,000 dollars in funding to applicants based on the “incremental cost” differential of the zero or near-zero emission vehicles as compared to conventionally-fueled equivalents with a Gross Vehicle Weight Rating (GVWR) of 14,001 pounds or greater by December 31, 2021.
3	Zero Emission Bus Program – Replace 20% and 100% of LAWA-owned and operated buses with zero-emission buses by 2023 and 2031, respectively.

Under Measure 1, Los Angeles World Airports (LAWA) agrees to implement the AQIM measure by working with airport tenants to achieve the GSE performance targets. LAWA will also submit annual progress reports including detailed equipment and emissions inventories, in addition to data on replaced GSE. The data will include equipment type, fuel type, engine model year, power rating, engine tier level, and annual activity data.

Under Measure 2, LAWA will submit annual progress reports that provide detailed information, accompanied by an emissions inventory, regarding the purchased zero or near-zero emission vehicles as well as data for the replaced vehicles.

Under Measure 3, LAWA will submit annual reports that include a list of buses in operation with associated vehicle identification number, model year, power rating, gross vehicle weight rating, fuel type, odometer reading, and annual vehicle miles travelled. Additionally, a detailed emissions inventory and a list of replaced and replacement buses will be provided by LAWA.

---

<sup>7</sup> For the LAX MOU, the term “MOU Measures” are used instead of “MOU Schedules”.

## John Wayne Airport

The MOU schedules for John Wayne Airport are summarized in Table 3.2.

Table 3.2. MOU Schedules for John Wayne Airport

Schedule	Title and Program Description
1	Ground Support Equipment - Require that all ground support equipment associated with commercial operations achieve fleet average NOx emission factors of 1.7 and 0.9 g/bhp-hr in 2023 and 2031, respectively.
2	Jet Fuel Delivery Trucks - Install a jet fuel pipeline by the end of 2019 and eliminate routine commercial aviation jet fuel delivery trucks by 2023.
3	Parking Shuttle Bus Electrification – Replace a minimum of 50% and 80% of airport employee and passenger remote parking compressed natural gas (CNG) shuttle buses with battery-electric shuttle buses by 2023 and 2031, respectively. The airport may continue to maintain standby shuttle buses for emergency use.

Under Schedule 1, the airport agrees to implement the AQIP measure by working with airport tenants to achieve the performance targets. The airport will also submit annual progress reports including detailed equipment and emissions inventories, in addition to data on replaced GSE. The equipment data will include equipment type, fuel type, engine model year, power rating, engine tier level, and annual activity data.

Under Schedule 2, the airport will provide annual reports that include the number of commercial passenger jet fuel delivery truck trips, an estimate of vehicle miles travelled, total amount of jet fuel delivered by fuel trucks and fuel pipeline, and a detailed emissions inventory.

Under Schedule 3, the airport will provide annual reports that include a list of shuttle buses in operation with associated vehicle identification number, model year, power rating, gross vehicle weight rating, fuel type, odometer reading, and annual vehicle miles travelled. Additionally, a detailed emissions inventory and a list of replaced and replacement buses will be provided by the airport.

## Burbank Airport

The MOU schedules for Burbank Airport are summarized in Table 3.3.

Table 3.3. MOU Schedules for Burbank Airport

Schedule	Title and Program Description
1	Ground Support Equipment - Require that all ground support equipment associated with commercial operations achieve fleet average NOx emission factors of 1.66 and 0.74 g/bhp-hr in 2023 and 2031, respectively.
2	Zero-Emission Shuttle Bus Program – Replace 50% and 100% of BUR-owned and operated buses with electric buses by 2023 and 2031, respectively.

Under Schedule 1, the airport agrees to implement the AQIP measure by working with airport tenants to achieve the performance targets. The airport will also submit annual progress reports including detailed equipment and emissions inventories, in addition to a list of replaced GSE. The equipment inventories must include equipment type, fuel type, engine model year, power rating, engine tier level, and annual activity data.

Under Schedule 2, the airport will provide annual reports that include a list of shuttle buses in operation with associated vehicle identification number, model year, power rating, gross vehicle weight rating, fuel type, odometer reading, and annual vehicle miles travelled.

## Long Beach Airport

The MOU schedules for Long Beach Airport are summarized in Table 3.4.

Table 3.4. MOU Schedules for Long Beach Airport

Schedule	Title and Program Description
1	Ground Support Equipment - Require that all ground support equipment associated with commercial operations achieve fleet average NOx emission factors of 0.93 and 0.44 g/bhp-hr in 2023 and 2031, respectively.

Under Schedule 1, the airport agrees to implement the AQIP measure by working with airport tenants to achieve the performance targets. The airport will also submit annual progress reports including detailed equipment and emissions inventories, in addition to data on replaced GSE. The equipment inventories must include equipment type, fuel type, engine model year, power rating, engine tier level, and annual activity data.

## Ontario Airport

The MOU schedule for Ontario Airport is summarized in Table 3.5.

Table 3.5. MOU Schedule for Ontario Airport

Schedule	Title and Program Description
1	Ground Support Equipment Emissions Reductions Policy - Require that all ground support equipment achieve fleet average NOx emission factors of 2.20 and 1.00 g/bhp-hr in 2023 and 2031, respectively.

Under Schedule 1, the airport agrees to implement the AQIP measure by working with airport tenants to achieve the performance targets. The airport will also submit annual progress reports including detailed equipment and emissions inventories, in addition to data on replaced GSE. The equipment data will include equipment type, fuel type, engine model year, power rating, engine tier level, and annual activity data.

## **Chapter 4: Potential SIP Creditable Emission Reductions**

---

Introduction

Enforceable Commitment

U.S. EPA's Integrity Element Demonstration

Technical Analyses

Funding

Legal Authority

Tracking actual emission reductions from MOU measures

Public disclosure

Reporting to U.S. EPA

## Introduction

In order for the emission reductions associated with implementation of the airports' AQIP/AQIM measures to be SIP creditable, South Coast AQMD is making an enforceable commitment to U.S. EPA to achieve these emissions reductions and to remedy any potential shortfall. South Coast AQMD is making this commitment based on the airports' commitment to implement the AQIP/AQIM measures specified in their respective MOUs with South Coast AQMD. Although the airports' AQIPs/AQIM include a number of measures and initiatives with potential emission reduction benefits, South Coast AQMD's commitment only covers the reductions from AQIP/AQIM measures that are eligible for SIP credit (i.e., satisfy U.S. EPA's integrity elements). This chapter includes South Coast AQMD's enforceable commitment and demonstrates how the emission reductions from these AQIP/AQIM measures satisfy the U.S. EPA's requirements.

### A. Enforceable Commitment

South Coast AQMD commits to achieve 0.52 and 0.37 tons per day (tpd) of NO<sub>x</sub> reductions in 2023 and 2031, respectively, based on implementation of the airports' AQIP/AQIM measures that are potentially SIP creditable. In the event of any shortfall in the prospective emission reduction benefits in 2023 and 2031, South Coast AQMD commits to adopt and submit substitute measures to U.S. EPA to remedy the shortfall. South Coast AQMD will work together with the airports and other stakeholders to consider potential new or enhanced programs, or better efforts to quantify existing programs, in addressing any shortfalls.

Specifically, South Coast AQMD will do the following:

1. Beginning in 2021 and every year thereafter until 2032, track the implementation of the airports' AQIP/AQIM measures with SIP creditable emissions reductions that are specified in the MOUs with the Los Angeles International Airport, John Wayne Airport, Burbank Airport, Ontario International Airport, and Long Beach Airport based on the annual reports submitted by these airports as specified in the MOU with each airport;
2. By January 1, 2023, achieve 0.52 tpd of NO<sub>x</sub> emission reductions from the 2023 baseline inventory contained in the 2016 South Coast Air Quality Management Plan;
3. By November 1<sup>st</sup> of each year beginning in 2021 and through 2024, report annually to U.S. EPA the following information:
  - a. Identify the portion of NO<sub>x</sub> emission reductions achieved and all emissions-related information necessary to independently quantify emission reductions;
  - b. Document actions by the airports on implementation of the SIP creditable AQIP/AQIM measures in the MOUs; and
  - c. Determine whether the implementation of SIP creditable AQIP/AQIM measures in the MOUs is projected to achieve the full 0.52 tpd of NO<sub>x</sub> emission reductions in 2023.
4. If U.S. EPA determines by February 1, 2022, that information provided by South Coast AQMD is insufficient to demonstrate that emission reductions required under Paragraph 2

will occur on schedule, adopt and submit to U.S. EPA, no later than November 1, 2022, substitute measures and/or rules through a public process that will achieve emission reductions addressing the shortfall as expeditiously as practicable and no later than January 1, 2023.

5. By January 1, 2031, achieve 0.37 tpd of NO<sub>x</sub> reductions from the 2031 baseline inventory contained in the 2016 South Coast Air Quality Management Plan;
6. By November 1<sup>st</sup> of each year beginning in 2024 and through 2032, report annually to U.S. EPA the following information:
  - a. Identify the portion of NO<sub>x</sub> emission reductions achieved and all emissions-related information necessary to independently quantify emission reductions;
  - b. Document actions by the airports on implementation of SIP creditable AQIP/AQIM measures in the MOUs; and
  - c. Determine whether the implementation of SIP creditable AQIP/AQIM measures in the MOUs is projected to achieve the full 0.37 tpd of NO<sub>x</sub> reductions in 2031.
7. If U.S. EPA determines by February 1, 2030 that information provided by South Coast AQMD is insufficient to demonstrate that emission reductions required under Paragraph 5 will occur on schedule, adopt and submit to U.S. EPA, no later than November 1, 2030, substitute measures and/or rules through a public process that will achieve emission reductions addressing the shortfall as expeditiously as practicable and no later than January 1, 2031.
8. Make each annual demonstration report publicly available or available by request

The annual reporting by the airports to South Coast AQMD and the South Coast AQMD's periodic reporting to U.S. EPA ensure that the projected emissions reductions will be achieved.

Table 4.1 provides a list of the airports AQIP/AQIM measures in the MOUs eligible for SIP credit and their estimated emission reductions in 2023 and 2031. These prospective SIP creditable emission reductions were estimated by South Coast AQMD staff based on the performance targets and the emission benefits for these measures specified in the AQIPs/AQIM. The methodology to estimate the SIP creditable emission reductions is provided in Appendix B.



**Table 4.1 List of Potentially SIP Creditable AQIP/AQIM Measures and Estimated Emission Reduction Benefits**

<b>Airport</b>	<b>AQIP/AQIM Measure Title and Description</b>	<b>2023 Reductions (NOx, tpy)</b>	<b>2031 Reductions (NOx, tpy)</b>
<b>LAX</b>	Ground Support Equipment Emissions Reduction Policy - Require that all ground support equipment operators at LAX achieve fleet average NOx + Hydrocarbon emission factors of 1.8 and 1.0 grams per brake horsepower-hour in 2023 and 2031, respectively.	146.71	98.94
<b>LAX</b>	LAX Alternative Fuel Vehicle Incentive Program - Implement an incentive program that will distribute up to \$500,000 dollars in funding to applicants based on the “incremental cost” differential of the zero or near-zero emission vehicles as compared to conventionally-fueled equivalents with a Gross Vehicle Weight Rating (GVWR) of 14,001 pounds or greater by December 31, 2021.	0.39	0.52
<b>LAX</b>	LAWA Clean Fleet Program – Replace 20% and 100% of LAWA-owned and operated buses with zero-emission buses by 2023 and 2031, respectively.	6.40	8.25
<b>BUR</b>	Ground Support Equipment - Require that all ground support equipment associated with commercial operations achieve fleet average NOx combined emission factors of 1.66 and 0.74 g/bhp-hr in 2023 and 2031, respectively.	10.19	6.07
<b>BUR</b>	Zero-Emission Shuttle Bus Program – Replace 50% and 100% of BUR-owned and operated buses with electric buses by 2023 and 2031, respectively.	0.11	0.07
<b>ONT</b>	Ground Support Equipment Emissions Reductions Policy - Require that all ground support equipment achieve fleet average NOx emission factors of 2.20 and 1.00 g/bhp-hr in 2023 and 2031, respectively.	7.83	9.93
<b>LGB</b>	Ground Support Equipment - Require that all ground support equipment associated with commercial operations achieve fleet average NOx emission factors of 0.93 and 0.44 g/bhp-hr in 2023 and 2031, respectively.	0.92	0.49

**Table 4.1 List of Potentially SIP Creditable AQIP/AQIM Measures and Estimated Emission Reduction Benefits (cont'd)**

Airport	AQIP/AQIM Measure Title and Description	2023 Reductions (NOx, tpy)	2031 Reductions (NOx, tpy)
JWA	Ground Support Equipment - Require that all ground support equipment associated with commercial operations achieve fleet average NOx emission factors of 1.7 and 0.9 g/bhp-hr in 2023 and 2031, respectively.	14.53	7.46
JWA	Jet Fuel Delivery Trucks - Install a jet fuel pipeline by the end of 2019 and eliminate routine commercial aviation jet fuel delivery trucks by 2023.	1.52	1.13
JWA	Parking Shuttle Bus Electrification – Replace a minimum of 50% and 80% of airport employee and passenger remote parking compressed natural gas (CNG) shuttle buses with battery-electric shuttle buses by 2023 and 2031, respectively.	1.34	0.64
<b>Total</b>		190	134

## B. U.S. EPA’s Integrity Element Demonstration

This subsection demonstrates how each AQIP/AQIM measure that is eligible for SIP credit satisfies the U.S. EPA’s four integrity element requirements (i.e., surplus, permanent, quantifiable, enforceable).

### a. Ground Support Equipment (GSE) AQIP/AQIM measures

All five airports include a GSE measure in their AQIPs/AQIMs. As such, the demonstration provided in this section regarding the compliance with the U.S. EPA’s integrity element requirements covers all five airports’ commitments to implement their respective GSE measure. Table 4.2 presents the GSE performance targets for the five airports as specified in their AQIPs/AQIM. The performance targets are defined in terms of an airport-wide fleet-average emission factor in g/bhp-hr unit. Some airports use Hydrocarbon (HC) and NOx combined emission factors while others use NOx emission factors. CARB’s In-Use Off-Road Diesel-Fueled Fleets regulation<sup>8</sup> and Large Spark-Ignition (LSI) Engine Fleet regulation<sup>9</sup> are also based on fleet average targets. The performance targets reflect the unique mix of the GSE fleet at each airport and the estimated emission reductions that can be achieved based on each airport’s best efforts.

<sup>8</sup> In-Use Off-Road Diesel-Fueled Fleets Regulation; <https://ww2.arb.ca.gov/our-work/programs/use-road-diesel-fueled-fleets-regulation>

<sup>9</sup> Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation; <https://ww3.arb.ca.gov/msprog/offroad/orspark/orspark.htm>

**Table 4.2 GSE Performance Targets of NOx Emission Factors by Airport**

<b>Airport</b>	<b>2023</b>	<b>2031</b>
BUR	1.66	0.74
JWA	1.7	0.9
LAX <sup>1</sup>	1.8	1.0
LGB	0.93	0.44
ONT	2.2	1.0

<sup>1</sup> LAX uses a HC + NOx combined emission factor

All the five airports’ GSE measures meet the required integrity elements as described below.

i. Surplus

Emission reductions are considered surplus when they are not otherwise required by or assumed in the SIP, SIP-related programs, any other state or local air quality programs, a consent decree, or a federal rule designed to reduce criteria pollutant or precursor emissions. Also, emission reductions are surplus only for the remaining useful life of the vehicle, engine, or equipment being replaced.

For the GSE measures, surplus emission reductions will be achieved through the replacement of existing equipment with cleaner equipment that are above and beyond the requirements in the existing regulations applicable to GSEs. The airports have established more stringent airport-wide GSE fleet-average performance targets than those required under the current regulations affecting GSE. These regulations are briefly described below:

CARB’s In-Use Off-Road Diesel-Fueled Fleets regulation applies to all off-road diesel vehicles with engines rated at 25 horsepower or greater including diesel-powered GSEs and other diesel off-road equipment and vehicles operated at the airports. The regulation requires statewide fleets to retire or retrofit older engines to achieve progressively lower average emission rates of NOx (Table 3 and 4 of CARB’s regulation).

<https://ww3.arb.ca.gov/msprog/ordiesel/documents/finalregorder-dec2011.pdf>

CARB’s LSI regulation applies to airport ground support equipment and other off-road vehicles powered by spark-ignited engines (e.g., gasoline, LPG) rated at 25 horsepower or more and greater than 1.0 liter displacement. The regulation requires that applicable statewide fleets achieve specific fleet average emission levels (FAELs) for HC and NOx. These FAELs became more stringent over time until reaching the final level in 2013 (Table 2 of CARB’s regulation).

<https://ww3.arb.ca.gov/msprog/offroad/orspark/largsparkappa-clean.pdf>

Since the proposed GSE fleet average targets in the airports' AQIP/AQIM measures are generally more stringent than the statewide fleet average requirements under these existing regulations and the reductions associated with these measures are not reflected in the SIP inventory, the emission reductions from these measures are considered surplus. To track and verify the actual emission reductions achieved, the airports will submit annual reports with detailed GSE equipment data and annual emissions inventories.

ii. Permanent

Emission reductions are considered permanent if they are achieved for the entire period that they are credited into the SIP. The emission reductions from the MOU measures are intended to help reach attainment of the 1997 and 2008 8-hour ozone National Ambient Air Quality Standards (NAAQS) in 2023 and 2031, respectively.

The emission reductions from the MOUs' GSE measures will be achieved by 2023 and 2031. The airports have set their GSE fleet average performance targets to become effective by January 1, 2023 and January 1, 2031. Following the MOUs' adoption by the airport authorities and the South Coast AQMD Governing Board, the airports will begin implementing their GSE measures by working with their tenants to achieve the performance targets in 2023 and 2031. The airports have agreed to monitor the progress and track the implementation of their respective GSE measures to ensure that the emission reductions from these measures are permanent. Beginning 2021, the airports will provide detailed information on all GSEs subject to the measure for each preceding year to South Coast AQMD along with emission calculations to track progress toward meeting their performance targets. Achieving these targets will require a gradual transition to zero-emission GSE or the cleanest available GSE. The annual emissions inventories provided by the airports will represent the emissions for the remaining non-zero emission GSE and they will provide the basis for tracking progress toward achieving the projected SIP credit in 2023 and 2031, and demonstrating permanency of emission reductions. The airports will also provide data on the sale, retirement and relocation of existing equipment to other airports within the South Coast Air Basin as specified in the MOUs.

iii. Quantifiable

Emission reductions should be calculated by a reliable and replicable methodology and all analyses must be substantiated and documented.

All five airports have developed a 2017 base year GSE emissions inventory based on specific GSE data obtained from their tenants for equipment operated in 2017 at the airports (i.e., equipment type, fuel type, engine size, model year, and annual operating data). The GSE data at each airport was used in conjunction with established calculation methodology from CARB's OFFROAD model<sup>10</sup> to estimate emissions. CARB's OFFROAD model provides specific parameters such as GSE

---

<sup>10</sup> CARB Mobile Source Emission Inventory Off-Road Documentation: <https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-road-documentation-0>

emission factors by model year, deterioration factors, load factors, and average activity levels (hours/year/unit). For the 2023 and 2031 emission inventory projections, the age distribution of the GSE equipment was assumed to be the same as the 2017 base year equipment age distribution. Emission reductions expected from the implementation of the GSE measures are provided in the technical appendix of each AQIP/AQIM. While the emissions inventory and emission reduction benefits provided in the AQIPs/AQIM reflect the most updated operational data at each airport, the SIP emission reduction credits need to be based on the emissions inventory submitted to U.S. EPA as part of the 2016 AQMP. Therefore, the emission reductions provided by the airports were converted to SIP inventory currencies for consistency purposes. The reconciliation of the airports' emissions data with the 2016 AQMP emissions inventory is provided in Appendix B of this report.

As specified in the MOUs, airports have committed to monitor the progress of the implementation of their GSE measures and to submit annual reports to South Coast AQMD. The annual reports will include annual emission inventories including methodology and calculations as well as a detailed list of all GSE operating within their airports for each preceding year (i.e., equipment ID, equipment type, fuel type, engine model year, engine power rating, engine tier and annual activity data). South Coast AQMD will quantify the actual reductions based on the SIP inventory currency. The SIP creditable emission reduction calculations and methodologies are provided in Appendix B of this report. As such, the emissions reductions associated with implementation of these measures are quantifiable.

iv. Enforceable

Emission reductions are enforceable if they are practically enforceable, independently verifiable, program violations are defined, and if emission-related information is publicly available. A mechanism needs to be established to monitor, assess and report on the implementation of measures and the emission reductions achieved from the measures.

Under the MOUs with South Coast AQMD, the airports have agreed to implement their MOU measures including the GSE measures. Each airport will implement its own mechanism to ensure that their GSE performance targets are achieved by working closely with their tenants. Each airport will calculate the overall fleet average GSE emission factor based on data collected from their tenants and provide all pertinent emissions data and calculations to South Coast AQMD.

As part of the GSE schedules in the MOUs, beginning in 2021, all the airports have agreed to submit annual reports to the South Coast AQMD (by June of each year) for each preceding year including the following specific information, as specified in Attachment A of each MOU:

1. List of ground support equipment operating at the airport with the following information:

- a. Equipment ID
  - b. Equipment type
  - c. Fuel type
  - d. Engine model year
  - e. Power rating (hp or kW)
  - f. Engine tier level (for diesel engines)
  - g. Annual activity data for non-zero emission equipment that is sufficient to determine emission reductions at a reasonable level of accuracy (i.e., actual operating hours from hour meter readings/maintenance records, average operating hours representative of equipment type and airport, or average operating hours by equipment/fuel type from CARB's OFFROAD model, if applicable)
2. For non-zero emission ground support equipment subject to this GSE measure, information regarding the sale or retirement of equipment available through CARB's DOORS system and, for pre-Tier 4 diesel, pre-2010 gasoline, or pre-2010 LPG ground support equipment relocated from the airport to another airport within the South Coast Air Basin, identify: a) the airport to which equipment is relocated, b) date of relocation, and c) estimated projected usage hours.
  3. A detailed annual emission inventory for all GSE operating at the airport, including methodology and calculations.

The airports' annual reports, the emission reductions achieved every year, and other pertinent emissions information related to the implementation of the MOU GSE measures will be fully accessible to the public and the U.S. EPA through a publicly accessible data portal on the internet provided by South Coast AQMD. As such, the emissions calculations can be independently verified.

**b. LAWA's Alternative-Fuel Vehicle Incentive Program**

To assist with implementation of its LAX Alternative Fuel Vehicle Requirement Program, LAWA is offering an incentive program to replace conventionally-fueled heavy-duty vehicles with zero or near-zero emission vehicles. Under this program, \$500,000 of incentive funding is allocated to help offset the higher cost of zero and near-zero emission vehicles compared to conventional diesel-fueled vehicles. The funding amount is expected to incentivize the replacement of approximately 20 heavy-duty diesel trucks under this program. This measure is expected to achieve emission reductions by accelerating the natural fleet turnover from conventional diesel trucks to zero or near-zero emission trucks which are certified at 0.02 or lower g/bhp-hr of NOx. Emission reductions associated with the implementation of this measure are eligible for SIP credit as demonstrated below.

i. Surplus

Emission reductions from this measure are surplus because they are above and beyond the requirements under the existing regulations. The funding criteria of zero or near-zero emission vehicles required in this incentive measure is more stringent than the existing regulations for heavy-duty trucks, and therefore, the emission reductions that are expected to be achieved with the incentive funding are considered as surplus.

Currently, on-road heavy duty vehicles are subject to CARB's In-Use On Road Diesel-Fueled Vehicles Regulation<sup>11</sup>, commonly referred to as the Truck and Bus Regulation. The regulation requires that heavy-duty vehicles with a gross vehicle weight rating (GVWR) greater than 14,000 pounds be retrofitted with diesel particulate filters, with implementation schedules based on truck model years. In addition, the older heavy-duty vehicles are required to be replaced according to a tiered schedule that began in 2015. By 2023, nearly all trucks and buses will be required to have model year 2010 engines or newer. The 2010 model year engine standard is 0.2 g/bhp-hr of NOx.

LAWA's Alternative-Fuel Vehicle Incentive program achieves surplus emission reductions above and beyond the existing requirements by funding near-zero or zero-emission trucks which are certified by CARB at 0.02 or lower g/bhp-hr of NOx. LAWA is administering this program through its own application process.<sup>12</sup>

ii. Permanent

LAWA is committed to complete the vehicle replacements through its incentive program before 2023. The emission reductions associated with these vehicle replacements are expected to be permanent as these new trucks continue their operation at LAWA as specified under the MOU. LAWA commits to submit annual reports to South Coast AQMD with specific operational activity data for these funded trucks. LAWA is also responsible for providing documentation on how the retired vehicles are scrapped or relocated outside of California. The annual reports will thus ensure the permanency of the emission reductions.

iii. Quantifiable

Emission reduction benefits from the implementation of this measure were estimated using the vehicle information provided by LAWA. The emission reductions were calculated based on the vehicle model year, CARB's 2023 requirement for trucks meeting the 2010 engine standard, and the emission certification level for near-zero trucks. Each vehicle selected for the funding award is required to submit the following information, as required by LAWA:

---

<sup>11</sup> In-Use On Road Diesel-Fueled Vehicles regulation, commonly referred to as CARB Truck and Bus Regulation: <https://ww2.arb.ca.gov/our-work/programs/truck-and-bus-regulation>

<sup>12</sup> Zero & Near-Zero Emission Heavy-Duty Vehicle Incentive Program Application: <https://www.lawa.org/-/media/lawa-web/environment/files/zero-and-near-zero-emission-heavy-duty-vehicle-incentive-program-application.ashx?la=en&hash=10DC4556153DEE5AECED40074B39D41AA0066EEE>

- Existing vehicle that is being replaced:
  - Vehicle type
  - Vehicle make
  - Vehicle Gross Vehicle Weight Rating (GVWR)
  - Vehicle Model
  - Vehicle Model Year
  - Engine Model Year
  - Registered Owner
  - Department of Transportation Number (if interstate)
  - California Highway Patrol CA Number (if applicable)
  - Total Annual Miles Traveled: or gallons of fuel used
  
- Replacement vehicle:
  - ARB Certification Executive Order (EO) Number
  - Propulsion System Engine Make
  - Propulsion System Engine Model Year
  - Propulsion System Engine Model
  - Fuel Type (Fuel Cell, Battery, etc.)
  - Engine Family

While detailed methodology to estimate emission reductions are provided in LAWA's AQIM, the above data will ensure that the actual emission reductions are quantified correctly under this measure. The SIP creditable emission reduction calculations and methodology are provided in Appendix B of this report.

iv. Enforceable

Under the MOU with South Coast AQMD, LAWA is committed to implement this program through its Alternative Fuel Vehicle Incentive Program described above. LAWA's Board of Airport Commissioners approved the Incentive Program in December 2018. Beginning in 2021, LAWA will also submit annual reports to the South Coast AQMD (by June of each year) for each preceding year including emissions inventory reports and the following specific information for trucks participating in this program:

1. Zero or near-zero Vehicle Identification Number
2. Zero or near-zero vehicle model year
3. Zero or near-zero vehicle GVWR
4. Zero or near-zero vehicle engine model year
5. Zero or near-zero vehicle engine power rating
6. Zero or near-zero vehicle fuel type
7. Executive Order number for the zero or near-zero vehicle engine
8. Zero or near-zero vehicle annual VMT
9. List of, and information on, replaced vehicles (e.g., scrapped)
10. A detailed emission inventory for near-zero or zero-emission trucks, including methodology and calculations.



The annual reports, the emission reductions achieved every year, and other pertinent emissions information related to the implementation of this MOU measure will be fully accessible to the public and the U.S. EPA through a publicly accessible data portal on the internet provided by South Coast AQMD. As such, the emissions calculations can be independently verified.

**c. Bus Electrification measures**

Three (LAX, BUR, and JWA) of the five airports propose to replace existing buses with zero-emission (ZE) electric buses. LAWA will replace its bus fleet (currently 84 buses) that provides transportation for passengers between the aircrafts' gates in the airfield and the airport terminals and for guests traveling between airport parking and passenger terminals (20% in 2023 and 100% in 2031). BUR will replace its buses providing transportation for guests traveling between airport parking and the passenger terminal (50% in 2023 and 100% in 2031). JWA will replace a minimum of 50% and 80% of Airport employee and passenger remote parking compressed natural gas (CNG) shuttle buses with battery-electric shuttle buses by 2023 and 2031, respectively. JWA airport currently has 12 CNG shuttle buses in operation to transfer passengers and airport employees between off-site parking lots and the airport terminal). The emissions calculations are based on conversion of these shuttle buses. All three measures target either existing diesel-fueled or CNG-fueled buses to be replaced with ZE electric buses. While the target fleets are different among three airports, the measures are similar for the purpose of demonstrating the integrity elements as described here.

**i. Surplus**

Emissions reductions from these measures are surplus because these reductions are above and beyond those required under existing regulations.

There are three existing regulations affecting buses operating at airports. First, CARB's In-Use On Road Diesel-Fueled Vehicles regulation requires the replacement of existing diesel trucks and buses with a GVWR greater than 14,000 pounds to be equivalent to the 2010 or newer engine model year exhaust emissions standards by 2023. Because the airports plan to replace their existing buses with electric zero-emission buses, the emission reductions beyond those achieved by compliance with the 2010 engine standard of 0.2 g/bhp-hr NO<sub>x</sub> would be considered surplus in 2023 and 2031.

Second, South Coast AQMD Rule 1194 requires airports and operators of public fleets providing passenger transportation services out of commercial airports to acquire low emission or alternative-fueled vehicles. This rule applies to passenger cars, light-duty trucks, and medium- and heavy-duty transit vehicle fleets of 15 or more vehicles operated by the airport authority, any other public fleet operators that transport passengers from commercial airports, and private fleets under contract or exclusive franchise to the airport. These described passenger shuttle buses and taxi cabs serving airports must comply with this rule as well. The rule requires fleets to

use low-emission or alternative fuel vehicles for new purchases. Because the airports plan to replace their existing CNG shuttle buses with electric ZE buses, the resulting emission reductions would be surplus to the requirements of Rule 1194.

Third, CARB's Zero-Emission Shuttle Bus regulation<sup>13</sup>, adopted by the CARB Governing Board in June 2019, requires that at least 33%, 66%, and 100% of airport shuttle fleets be zero-emission vehicles by December 31, 2027, 2031 and 2035, respectively. It also requires fleet owners to report fleet information annually starting in 2022 and to have zero-emission certificates for 2026 and later model year vehicles. LAWA plans to replace 20% of LAWA-owned buses with ZE buses at LAX by 2023. BUR plans to replace 50% of its contracted buses with ZE buses by 2023. JWA plans to replace 50% of its contracted CNG buses with JWA-owned ZE buses by 2023. Because the replacement requirement under CARB's regulation does not start until 2027, all replaced buses by the airports by 2023 will be surplus to the regulation. In 2031, however, only 67% of the buses that LAX and BUR plan to replace will be surplus based on the 33% zero-emission bus replacement requirement in 2027 under CARB's regulation. For JWA, six of the ten electric buses will still be surplus to the regulation in 2031.

ii. Permanent

All three airports have phase-in schedules for the deployment of ZE buses by January 1, 2023 and January 1, 2031 under their respective measures. Following the MOU adoption by the airport authorities and the South Coast AQMD Governing Board, the airports will begin implementing their respective bus electrification measure.

Beginning 2021, the airports will submit annual reports to South Coast AQMD that include detailed information on shuttle buses replaced for each preceding year along with emission calculations to track progress toward meeting the performance targets. In the annual reports, LAWA, BUR and JWA will also provide documentation regarding the operation of their buses to ensure that the emission reductions are permanent.

iii. Quantifiable

Emission reduction benefits are estimated using vehicle specific information for ZE shuttle buses (i.e., vehicle miles traveled per year) along with applicable emission factors from CARB's EMFAC model.<sup>14</sup>

Under the MOUs, the three airports have committed to monitor the progress of the implementation of their respective zero-emission bus replacements and to submit annual reports to South Coast AQMD including a detailed annual emission inventory for each preceding year. The report will also include information on the

---

<sup>13</sup> CARB Zero-Emission Airport Shuttle regulation; <https://ww2.arb.ca.gov/our-work/programs/zero-emission-airport-shuttle>

<sup>14</sup> <https://ww2.arb.ca.gov/our-work/programs/mobile-source-emissions-inventory/msei-modeling-tools>

calculations and methodology to further substantiate the emission reductions from the measure.

Further details for calculating the emission reductions are included in the technical support document portion of each airport's AQIP/AQIM. The SIP credit calculation methodology for these measures will be based on the VMTs for these ZE buses and the corresponding EMFAC emission factors as described in Appendix B of this staff report.

iv. Enforceable

Under the MOUs with South Coast AQMD, LAWA, BUR, and JWA have agreed to implement these measures. Beginning in 2021, LAWA, BUR and JWA are also committed to submit annual reports to the South Coast AQMD (by June of each year) for each preceding year including the following specific information for buses covered under these measures:

1. List of buses operating at the airport with the following information:
  - a. Vehicle Identification Number
  - b. Vehicle model year
  - c. GVWR
  - d. Engine model year
  - e. Engine power rating
  - f. Vehicle fuel type
  - g. Odometer reading
  - h. Annual vehicle miles travelled
2. A detailed emission inventory for buses, including methodology and calculations.
3. List of buses replaced during the reported year and above listed information on both replaced and replacement buses

The annual reports, the emission reductions achieved every year, and other pertinent emissions information related to the implementation of these MOU measures will be fully accessible to the public and the U.S. EPA through a publicly accessible data portal on the internet provided by South Coast AQMD. As such, the emissions calculations can be independently verified.

**d. JWA Jet Fuel Pipeline Installation measure**

JWA will install a new pipeline to transport jet fuel to a new storage tank at the airport facility by the end of 2019. This project eliminates routine commercial aviation jet fuel delivery trucks before 2023.

i. Surplus

Fuel delivery trucks are covered under CARB's In-Use On Road Diesel-Fueled Vehicles regulation (described in previous sections), which requires that all existing trucks meet the 2010 model year engine standard by 2023. Therefore, since this measure eliminates emissions from jet fuel delivery trucks to the airport, the

reductions above and beyond the existing regulation (i.e., compliance with the 2010 engine standard) are considered surplus.

ii. Permanent

JWA plans to complete the pipeline project by the end of 2019 and once constructed, the pipeline will eliminate routine commercial passenger jet fuel delivery trucks.

Beginning 2021, JWA will submit annual reports to South Coast AQMD, for each preceding year, to document the implementation of this measure and the permanency of the emission reductions. The annual report will provide data on the existing routine and non-routine commercial passenger jet fuel delivery trucks (number of trucks trips, truck model year, and vehicle miles traveled), volume of fuel delivered by trucks, and an emissions inventory for trucks including methodology and calculations.

iii. Quantifiable

The new jet fuel pipeline will eliminate the emissions associated with the existing routine commercial passenger jet fuel delivery trucks. Emission reduction benefits resulting from the measure are estimated by using information provided by JWA on fuel delivery trucks and applying emission factors from CARB's EMFAC model. The annual reports provided by JWA will ensure that the emission reductions estimated from the eliminated truck delivery trips are real and quantifiable in subsequent years.

Further details for calculating the emission reductions are included in the technical support document portion of JWA's AQIP. The SIP credit calculation methodology for these measures will be based on the VMTs for these trucks and the corresponding EMFAC emission factors as described in Appendix B of this staff report.

iv. Enforceable

Under the MOU with South Coast AQMD, JWA is committed to implement the measure. Beginning in 2021, JWA is also committed to submit an annual report to the South Coast AQMD (by June of each year) for each preceding year including the following specific information for this measure:

1. Total number of routine and non-routine truck trips delivering jet fuel for commercial passenger aviation, and truck model years, if available.
2. Total amount of jet fuel delivered by trucks.
3. An estimate of total vehicle miles travelled.
4. A detailed emission inventory for fuel delivery trucks, including methodology and calculations.

The annual reports, the emission reductions achieved every year, and other pertinent emissions information related to the implementation of these MOU measures will

be fully accessible to the public and the U.S. EPA through a publicly accessible data portal on the internet provided by South Coast AQMD. As such, the emissions calculations can be independently verified.

### **C. Technical Analyses**

The airports have provided emissions inventories for base year (2017) and two future milestone years (2023 and 2031) under the business-as-usual scenario and the MOU implementation scenarios. These inventories are included in the airports' AQIPs and AQIM. The South Coast AQMD has also provided the necessary documentation and technical analysis for estimating SIP related emission reduction benefits in Appendix B of this staff report. South Coast will make the annual reports submitted by the airports (beginning in 2021), emissions calculations and methodologies, and other pertinent emissions data publicly accessible.

### **D. Funding**

LAWA's Alternative-Fuel Vehicle Incentive Program is the only AQIP/AQIM measure that is based on incentive funding to implement the program. LAWA has allocated a total of \$500,000 for this incentive program, which has already been approved by the airport's authority. LAWA will be responsible for administering its own program.

### **E. Legal Authority**

Pursuant to Section 40702 of the California Health and Safety Code, South Coast AQMD "shall adopt rules and regulations and do such acts as may be necessary or proper to execute the powers and duties granted to, and imposed upon" South Coast AQMD. Moreover, Section 40701(f) of the California Health and Safety Code provides that a district shall have power to "cooperate and contract with any federal, state, or local governmental agencies, private industries, or civic groups necessary or proper to the accomplishment of the purposes of this division." Such acts that are necessary to attain the federal ozone NAAQS in 2023 and 2031 include entering into MOUs with the airport authorities to achieve emission reductions from non-aircraft related mobile sources at the airports.

### **F. Tracking actual emission reductions from MOU measures**

Beginning in 2021, the airports have agreed to submit annual reports to South Coast AQMD on their eligible SIP creditable AQIP/AQIM measures in the MOUs. The annual reports will contain detailed information on the implementation of these measures including equipment and vehicle data (e.g., engine size, model year, annual operating data, etc.), annual emissions inventories along with methodologies and calculations, and information on existing equipment and vehicles (e.g., retired, sold, and relocated within South Coast Air Basin), where applicable. The annual reports will be made available to the public by South Coast AQMD so any progress on emission reduction benefits toward the final emission reduction targets can be calculated and validated by the public.

## **G. Public disclosure**

The South Coast AQMD will provide public access to all information related to the emission reductions associated with implementation of the AQIPs/AQIM's eligible SIP creditable measures in the MOUs. Also, the public will have access to the annual reports submitted by the airports to the South Coast AQMD, as described in the previous sections, to independently verify emission calculations. The South Coast AQMD plans to post the annual reports within 30 days of receipt for access by the public.

In order to ensure easy accessibility to the information, the South Coast AQMD will post the emission related documents on the South Coast AQMD website under the existing "Airports MOU" topic page. Contact information to address any further inquiries from the public regarding the posted information is also available on the page.

## **H. Reporting to U.S. EPA**

By June 1<sup>st</sup> of each year beginning in 2021 and through the MOU term ending in 2032, the airports will provide annual reports to South Coast AQMD on implementation of the eligible SIP creditable AQIP/AQIM measures identified in the MOUs. The annual reports will include detailed equipment/vehicle data and emission calculations to demonstrate progress toward meeting the performance targets in these measures. Based on information in the annual reports provided by the airports, South Coast AQMD will quantify the corresponding SIP creditable actual emission benefits achieved from implementation of the MOU measures and provide reports to U.S. EPA to document these reductions. South Coast AQMD's detailed reporting commitments to U.S. EPA are specified in Section A of this chapter.

## **Chapter 5: California Environmental Quality Act (CEQA) and Socioeconomic Assessment**

---

CEQA Analysis

Socioeconomic Assessment

### **California Environmental Quality Act Analysis**

Pursuant to the California Environmental Quality Act (CEQA), the South Coast AQMD, as Lead Agency, has reviewed the proposed project pursuant to: 1) CEQA Guidelines Section 15002(k) – General Concepts, the three-step process for deciding which document to prepare for a project subject to CEQA; and 2) CEQA Guidelines Section 15061 – Review for Exemption, procedures for determining if a project is exempt from CEQA.

The proposed project is comprised of voluntary agreements related to activities the airports have already agreed to implement as specified in five MOUs between the South Coast AQMD and five commercial airports, and South Coast AQMD's enforceable commitment to U.S. EPA to backstop any emission reductions shortfall. The MOUs outline each airport's AQIP or AQIM measures that are capable of achieving SIP creditable emission reductions from non-aircraft mobile sources related to airport operations. The act of voluntarily agreeing to enter into MOUs with the five airports, as well as quantifying emissions for the purpose of establishing an enforceable commitment and crediting the emission reductions into the SIP are administrative and procedural in nature. As explained in the next section "Summary of CEQA Analyses Conducted by Each Airport," the MOUs will have no new physical impacts beyond the potential environmental impacts that were previously analyzed under CEQA for each of the five commercial airports AQIP or AQIM, as applicable. Thus, South Coast AQMD staff has determined that it can be seen with certainty that there is no possibility that the proposed project may have a significant adverse effect on the environment. Therefore, the project is considered to be exempt from CEQA pursuant to CEQA Guidelines Section 15061(b)(3) – Common Sense Exemption.

Further, as provided in CEQA Guidelines Section 15306 – Information Collection, the proposed project is exempt from CEQA because it will consist of basic data collection, research and resource evaluation activities and will not result in a serious or major disturbance to an environmental resource. Additionally, because the proposed project is designed to further protect or enhance the environment by supporting the reduction of non-aircraft mobile source emissions at five commercial airports within South Coast AQMD's jurisdiction, the proposed project is also categorically exempt from CEQA pursuant to CEQA Guidelines Section 15308 – Actions by Regulatory Agencies for Protection of the Environment.

Finally, South Coast AQMD staff has determined that there is no substantial evidence indicating that any of the exceptions to the categorical exemptions apply to the proposed project pursuant to CEQA Guidelines Section 15300.2 – Exceptions. Therefore, the proposed project is exempt from CEQA. A Notice of Exemption for each airport MOU has been prepared pursuant to CEQA Guidelines Section 15062 – Notice of Exemption and is included in Attachment C of this Governing Board package. If the proposed project is approved, the Notices of Exemption will be filed with the county clerks of Los Angeles, Orange, Riverside and San Bernardino counties.

### **Summary of CEQA Analyses Conducted by Each Airport**

Each airport conducted a CEQA analysis of the potential environmental impacts of incorporating selected measures from their AQIP or AQIM, as applicable, into their respective MOUs. The following background summary of each airport's CEQA analysis has been provided for informational purposes.



### **Los Angeles International Airport**

The LAX AQIM consists of 11 measures and the LAX MOU incorporates the following three measures: 1) the ground support equipment emissions reduction policy; 2) the LAX alternative fuel vehicle incentive program; and 3) the zero emission bus program. The CEQA analysis conducted by the City of Los Angeles Department of Airports, as presented in the following record of adoption, concluded that the LAX MOU is exempt from CEQA<sup>15</sup>:

- “1. *DETERMINE that this action is administratively exempt from the California Environmental Quality Act (CEQA) pursuant to Article II, Section 2.n of the Los Angeles City CEQA Guidelines.*
2. *General policy procedure making is administratively exempt from California Environmental Quality Act (CEQA) requirements pursuant to Article II, Section 2.n of the Los Angeles City CEQA Guidelines.*”

The LAX MOU and the corresponding CEQA exemption determination was approved by the City of Los Angeles Department of Airports at the November 7, 2019 regular meeting of the Board of Airport Commissioners.

### **John Wayne Airport**

The JWA AQIP consists of 13 measures and initiatives and the JWA MOU incorporates the following three measures: 1) ground support equipment emission reduction policy; 2) jet fuel pipeline to replace delivery trucks; and 3) parking shuttle bus electrification. The County of Orange conducted multiple CEQA analyses for its various components of the JWA AQIP, as follows:

1. AQIP Measure “Jet Fuel Delivery Trucks” was previously analyzed in the Initial Study (No. CPP 2013-00087) and Mitigated Negative Declaration for the John Wayne Airport New Jet Fuel Pipeline and Tank Farm, which was adopted by the Director of Orange County Planning on May 8, 2014. Mitigation measures were made a condition of project approval and a Mitigation Monitoring and Reporting Program was also adopted for the project in May 2014<sup>16</sup>.
2. The remaining AQIP measures and initiatives were previously analyzed in the Final Environmental Impact Report (EIR) No. 617 for the John Wayne Airport Settlement Agreement Amendment which was certified by the Orange County Board of Supervisors on September 30, 2014. Mitigation measures were made a condition of project approval and a Mitigation Monitoring and Reporting Program was also adopted for the project. In particular, Mitigation Measure AQ/GHG-4 required the development of a Climate Action Plan and the JWA MOU includes emission

---

<sup>15</sup> City of Los Angeles Department of Airports, Regular Meeting of the Board of Airport Commissioners, November 7, 2019. [https://lawa.granicus.com/GeneratedAgendaViewer.php?view\\_id=4&clip\\_id=557](https://lawa.granicus.com/GeneratedAgendaViewer.php?view_id=4&clip_id=557)

<sup>16</sup> County of Orange, Initial Study (No. CPP 2013-00087) and Mitigated Negative Declaration for the John Wayne Airport New Jet Fuel Pipeline and Tank Farm; [http://www.ocpublicworks.com/ds/planning/projects/2nd\\_district/2nd\\_district\\_archived/is\\_mnd\\_john\\_wayne\\_airport\\_new\\_jet\\_fuel\\_pipeline\\_and\\_tank\\_farm\\_and\\_appendices](http://www.ocpublicworks.com/ds/planning/projects/2nd_district/2nd_district_archived/is_mnd_john_wayne_airport_new_jet_fuel_pipeline_and_tank_farm_and_appendices).

reduction strategies that are consistent with and incorporated into this mitigation measure<sup>17</sup>.

The Orange County Board of Supervisors also noted that no substantial changes have been made to the projects previously analyzed in the Initial Study and Mitigated Negative Declaration for the John Wayne Airport New Jet Fuel Pipeline and Tank Farm, the Final EIR No. 617 for the John Wayne Airport Settlement Agreement Amendment, or to Mitigation Measure AQ/GHG-4. Further, no substantial changes have occurred in the circumstances under which the JWA MOU is being undertaken, and no new information of substantial importance to the projects previously analyzed in the Initial Study and Mitigated Negative Declaration for the John Wayne Airport New Jet Fuel Pipeline and Tank Farm, the Final Environmental Impact Report No. 617 for the John Wayne Airport Settlement Agreement Amendment, or Mitigation Measure AQ/GHG-4, which was not known, or could not have been known, when the Initial Study and Mitigated Negative Declaration for the John Wayne Airport New Jet Fuel Pipeline and Tank Farm was adopted, and when the Final EIR No. 617 for the John Wayne Airport Settlement Agreement Amendment was certified. Therefore, no further environmental review of these project components is required.

The Orange County Board of Supervisors also conducted a CEQA analysis for incorporating the three measures of JWA AQIP into the JWA MOU and determined that the JWA MOU is exempt from CEQA because the JWA MOU: 1) will not have a significant effect on the environment because it is an action taken by a regulatory agency to assure the maintenance, restoration, enhancement, or protection of the environment per CEQA Guidelines Section 15308; and 2) includes basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource per CEQA Guidelines Section 15306.

The JWA MOU and the corresponding CEQA exemption determination was approved by the Orange County Board of Supervisors at the November 19, 2019 Meeting<sup>18</sup>.

### **Long Beach Airport**

The LGB AQIP consists of seven measures and initiatives and the LGB MOU incorporates one measure that pertains to ground support equipment. The CEQA analysis conducted by the City of

---

<sup>17</sup> County of Orange, Mitigation Monitoring and Reporting Program for Final Environmental Impact Report No. 617 for the John Wayne Airport Settlement Agreement Amendment, SCH No. 2001111135; <https://www.ocair.com/communityrelations/settlementagreement/docs/MitigationMonitoringAndReportingProgramForEIR617.pdf>; and [http://cams.ocgov.com/Web\\_Publisher/Agenda05\\_07\\_2019\\_files/images/O00119-000429A.PDF](http://cams.ocgov.com/Web_Publisher/Agenda05_07_2019_files/images/O00119-000429A.PDF).

<sup>18</sup> Orange County Board of Supervisors Meeting, November 19, 2019. [http://cams.ocgov.com/Web\\_Publisher/agenda.pdf](http://cams.ocgov.com/Web_Publisher/agenda.pdf)

Long Beach as presented in the following record of adoption, concluded that the LGB MOU is exempt from CEQA<sup>19</sup>:

*“This MOU is a project that has been determined to not have a significant effect on the environment and which, is therefore, exempt from the provisions of CEQA because it is an action taken by a regulatory agency to assure the maintenance, restoration, enhancement, or protection of the environment (CEQA Guidelines Section 15308) and includes basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource (CEQA Guidelines Section 15306).”*

The adoption of the LGB MOU and the corresponding CEQA exemption determination by the Long Beach City Council at the November 19, 2019 meeting.

### **Ontario International Airport**

The ONT AQIP consists of nine measures and initiatives and the ONT MOU incorporates one measure that pertains to the ground support equipment emission reductions policy. The CEQA analysis conducted by the Ontario International Airport Authority, as presented in the following record of adoption, concluded that the ONT MOU is exempt from CEQA<sup>20</sup>:

*“The ONT MOU is a project that has been determined to not have a significant effect on the environment and which, is therefore, exempt from the provisions of CEQA because it is an action taken by a regulatory agency to assure the maintenance, restoration, enhancement, or protection of the environment (CEQA Guidelines Section 15308) and includes basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource (CEQA Guidelines Section 15306).”*

The ONT MOU and the corresponding CEQA exemption determination was considered and approved by the Ontario International Airport Authority Commission at the October 29, 2019 meeting.

### **Burbank Airport**

The BUR AQIP consists of nine measures and initiatives and the BUR MOU incorporates the following two measures: 1) ground support equipment emission reduction policy; and 2) the zero-emission shuttle bus program. The CEQA analysis conducted by the Burbank-Glendale-

---

<sup>19</sup> City of Long Beach, Approve Memorandum of Understanding Between the South Coast Air Quality Management District and City of Long Beach (acting in its capacity as the owner and operator of Long Beach Airport), November 19, 2019. <https://longbeach.legistar.com/View.ashx?M=A&ID=738240&GUID=6E70C945-6A16-482F-BBF5-623B80512713>

<sup>20</sup> Ontario International Airport Authority, Agenda Item 10 10 (administrative discussion/action/report): Approve Memorandum of Understanding Between the South Coast Air Quality Management District and Ontario International Airport Authority, October 29, 2019. [https://www.flyontario.com/sites/default/files/agenda\\_packet\\_-\\_20191029\\_-\\_public.pdf](https://www.flyontario.com/sites/default/files/agenda_packet_-_20191029_-_public.pdf)

Pasadena Airport Authority, as presented in the following record of adoption, concluded that the BUR MOU is exempt from CEQA<sup>21</sup>:

*“This MOU is a project that has been determined to not have a significant effect on the environment and which, is therefore, exempt from the provisions of the California Environmental Quality Act (CEQA) because it is an action taken by a regulatory agency, as authorized by state or local ordinance, to assure the maintenance, restoration, enhancement, or protection of the environment (CEQA Guidelines Section 15308) and includes basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource (CEQA Guidelines Section 15306).”*

The BUR MOU and the corresponding CEQA exemption determination was considered and approved by the Burbank-Glendale-Pasadena Airport Authority Commission at the November 4, 2019 meeting.

In addition, BUR AQIP measures pertaining to the sustainable design and construction program as well as the trip reduction measures were previously analyzed in the Final Environmental Impact Report for a Replacement Airline Passenger Terminal at Burbank Bob Hope Airport, which was previously certified on July 11, 2016. BUR representatives also provided the following statement regarding the details about their CEQA analysis for the sustainable design and construction program as well as the trip reduction measures<sup>22</sup>:

*In addition, the Final Environmental Impact Report for a Replacement Airline Passenger Terminal at Burbank Bob Hope Airport (State Clearinghouse Number 2015121095) is previously certified by the Authority on July 11, 2016 and reflects the independent judgment of the Authority and satisfies the requirements of CEQA for the sustainable design and construction program and trip reduction measures in the BUR AQIP.”*

## Socioeconomic Assessment

The Facility-Based Mobile Source Measure for Commercial Airports will be implemented through voluntary Memorandum of Understandings (MOUs) with the five commercial airports based on each airports' implementation of Air Quality Improvement Plans/Measures (AQIPs/AQIMS) measures specified in the MOUs. No socioeconomic impacts beyond the impacts from the airports' implementation of the AQIP/AQIM measures are expected from implementing the MOUs.

---

<sup>21</sup> Burbank-Glendale-Pasadena Airport Authority, Special Commission Meeting. November 4, 2019.

<http://hollywoodburbankairport.com/wp-content/uploads/2019/11/11-4-19-BGPAA-Commission-Agenda.pdf>

<sup>22</sup> Hollywood Burbank Airport, Final Environmental Impact Report for a Replacement Airline Passenger Terminal at Burbank Bob Hope Airport, SCH No. 2015121095; <https://elevatebur.com/documents/>.

## **Chapter 6: Response to Public Comments**

---

Delta Airlines  
Sierra Club



**Delta Air Lines, Inc.**  
1020 Delta Blvd  
Bldg A2, Floor 5, Dept 885  
Atlanta, GA 30354

October 21, 2019

Sang-Mi Lee, Ph.D.  
Program Supervisor  
South Coast AQMD  
21865 Copley Drive  
Diamond Bar, CA 91765

RE: Commercial Airports Memoranda of Understanding

Delta Air Lines, Inc (Delta) is submitting this comment letter regarding the Facility-Based Mobile Source Measure for Commercial Airports and related Memoranda of Understanding (MOUs) with each commercial airport in the South Coast Basin. Delta understands that the MOUs represent voluntary agreements between South Coast AQMD and each commercial airport with each party having specific responsibilities and commitments.

Air Quality Improvement Plans (AQIPs) and/or Air Quality Improvement Measures (AQIMs) with specific measures and initiatives to reduce emissions from non-aircraft mobile sources related to each participating airport's operations have been drafted by each participating airport. The purpose of the MOUs with commercial airports is to set forth the procedures by which the South Coast AQMD will quantify the emission reduction benefits associated with the implementation of specified components of the airports' respective AQIP or/ AQIM strategies that are eligible for State Implementation Plan (SIP) credit.

Even though Delta and other airlines are not parties to the MOUs, the airlines will be asked to help the airports and the South Coast AQMD achieve the emission reduction benefits. This will require substantial capital investment by Delta and other participating equipment owners. Despite this significant cost, Delta looks forward to working with the airports, the South Coast AQMD and other stakeholders as part of Delta's overall commitment to environmental sustainability.

1-1

Delta would like to comment on five specific items we feel are critical to successful implementation, and ask that they be taken into consideration in the drafting of the MOU and associated goals:

1. Charging infrastructure at an airport must be sufficient to meet the demand for electric replacements;
2. Tracking individual unit activity is not feasible;
3. Emission factors need to be standardized and commonly applied at each airport;
4. Redevelopment initiatives must coincide with infrastructure upgrades;
5. Any decision to retire an asset is at the owner's discretion.

Delta provides the following additional commentary related to these five concerns:

1. Charging infrastructure at an airport must be sufficient to meet the demand for electric replacements

Delta's ground support equipment (GSE) fleet is a critical part of our overall operation. GSE must be readily available and operational in order to ensure we fulfill our commitments to passengers and other customers. There must be one charging station for every 2-3 electric GSE units to perform adequately and avoid out of service time. The chargers must fit the required physical specifications and electrical requirements in order for the GSE and batteries to have a prolonged life cycle. Furthermore, charging stations must be located such that they are readily accessible and do not require long travel times to be utilized. In order to ensure these operational requirements are met, each airport authority must achieve this minimum for charging capacity in advance of equipment owners exchanging additional equipment for electric powered GSE. Delta stands ready to invest in a cleaner GSE fleet, but it will be critical for each airport to coordinate with Delta and other airlines in order to ensure that the aggressive GSE emission reduction targets included in the MOUs can be achieved on schedule.

1-2

2. Tracking individual unit activity is not feasible

Delta does not currently have data for all GSE that would allow us to accurately account for usage to be reported on an individual piece-of-equipment by piece-of-equipment basis<sup>1</sup>. It would be an extreme burden to routinely collect usage data for all GSE due to the hundreds of pieces of equipment in active service. Further certain units do not have working hour meters and/or odometers. Particularly given the extraordinary investment that Delta is prepared to make to help the airports and South Coast AQMD achieve the emissions reductions targets set forth in the MOUs, it is vital that the MOUs not impose unnecessarily burdensome, and ultimately infeasible, requirements on the airlines. If the MOUs were to include unrealistic and unachievable methodologies—including without limitation a requirement to track individual unit activities—this would ultimately prevent the South Coast AQMD and the airports from fulfilling the MOUs' procedural requirements, and inhibit the South Coast AQMD's and airports' shared goals of achieving SIP-creditable emission reductions. Accordingly, Delta strongly urges that the MOUs allow the airports to identify GSE fleet emission reductions based on a per-piece utilization average. Final methodologies should be mutually determined following adoption of the MOU in cooperation with Delta and the other airlines, based on confirmation that the proposed methodology is feasible and not unnecessarily burdensome. Please remove the annual activity data requirement from the MOU.

1-3

3. Emission factors need to be standardized and commonly applied at each airport

Each airport must clearly define how emission factors will be assessed for each type of GSE and engine. These must correspond with the target units. Certain CARB standards, specifically those that apply to on-road equivalents, will evidently not be used by individual airports and when new standards are applied equipment owners need to understand how to identify the impact of each engine in their fleet.

1-4

4. Redevelopment initiatives must coincide with infrastructure upgrades

In light of the various redevelopment projects planned and underway at the commercial airports within the South Coast Basin, it is necessary to use good judgment with the timing of infrastructure changes so as not to create a burden with respect to existing construction timeframes. If unavoidable construction delays occur during redevelopment in particular, we urge that investments in electric charging infrastructure be (i) timed to coincide with the timeframes established in the MOUs; and (ii) properly coordinated to avoid the need to install and then promptly replace charging infrastructure as a result of a planned redevelopment project. In addition, because upgrades in electric charging infrastructure are

1-5

1. In cases where we wish to claim a low usage exemption then hour meter readings are collected monthly, but this is an extremely small portion of our fleet.

often timed to coincide with redevelopment projects, we caution that delays in the redevelopment process could impact an operators' ability to increase electric engines in their GSE fleets. Accordingly, coordination, regular communication, and advance planning between the airports and each airline and GSE fleet operator will be required. By way of example, but not limitation, increases in electric engines in Delta's GSE fleet at LAX is dependent on the timely completion of Terminals 2 and 3 because those upgrades will include the expanded charging infrastructure necessary to support additional electric GSE equipment. Similar coordination of redevelopment activities, new electric charging infrastructure, and purchases of electric GSE equipment will be needed at other South Coast Basin airports.

1-5

5. Any decision to retire an asset is at the owner's discretion

Within the past 72 hours, comments have been documented during public meetings that equipment removed from service in the South Coast basin must be scrapped. This last-minute change — made despite the fact that this issue was never raised at any of the public meetings held over the prior sixteen (16) months — is unacceptable. This idea does not take into account the fact that an asset removed from LAX, for instance, may very well be newer, be in better condition or have lower emissions levels than another asset it could replace in another area of Delta's operation outside of the South Coast basin. The owner should have full discretion as to whether or not an asset has met the end of its useful life, and if they will choose to retire it or relocate it out of the South Coast basin. In short, this last-minute change:

- would not reduce emissions within the South Coast basin;
- would impede efforts to reduce emissions outside the South Coast basin;
- violates basic principles of transparency in decision-making and the public process;
- would impose a heavy burden on equipment owners who will bear the burden of implementing measures contemplated by the MOU; and
- would put at risk the ability to implement other measures contemplated by the MOU.

1-6

For all these reasons, we strongly and respectfully urge the AQMD and airports to refrain from accepting this last-minute change to the MOUs and AQIPs / AQIMs.

Thank you for this opportunity to comment, and Delta looks forward to working with South Coast AQMD and each airport authority to ensure success in achieving the important goals of the MOUs.

Sincerely,



Cheryl Meyers  
Program Manager – Air Quality, Delta

CC:  
Los Angeles World Airports  
John Wayne Airport, Orange County  
Ontario International Airport Authority



**Responses to Comment Letter from Delta Airlines, Inc.**  
**(Comment Letter 1)**

**Response to Comment 1-1:**

Staff acknowledges the comments by Delta Airlines and appreciates Delta's commitment to environmental sustainability.

**Response to Comment 1-2:**

The airport-specific performance targets account for the unique circumstances and operational capabilities of each airport. The airports have agreed to the airport-wide fleet average performance targets while taking into account the necessary infrastructure to achieve these performance targets. The airports are expected to coordinate with all their tenants to ensure the infrastructure needs are met.

**Response to Comment 1-3:**

South Coast AQMD appreciates the concerns raised by Delta regarding the reporting of equipment-specific activity data. Annual activity data is critical for calculating GSE emissions reductions and satisfying U.S. EPA's integrity elements necessary for SIP credit. Given the upcoming attainment deadlines for meeting the ozone standard and the substantial amount of NOx reductions needed, it is critical that we obtain as many SIP-creditable reductions as possible.

The MOU schedules for GSE measures have been revised to allow for flexibility in reporting annual activity data. Specifically, airlines and operators may choose from the following three options:

1. Actual operating hours from hour meter readings/maintenance records
2. Average operating hours representative of equipment type and airport
3. Average operating hours by equipment/fuel type from CARB's OFFROAD model, if applicable

Staff believes that these options offer significant flexibility to airlines and operators for reporting annual activity data. However, it is imperative that activity data be reported as such data is necessary for South Coast AQMD and the public to independently verify emission reductions.

**Response to Comment 1-4:**

The emission factors can be obtained from CARB's OFFROAD Model for each piece of equipment based on fuel type, engine size, and model year. If airports use other data sources, they will need to substantiate the applicability of these factors.

**Response to Comment 1-5:**

Staff acknowledges the need to coordinate redevelopment projects with airlines and operators. It will be the airports' responsibilities to coordinate with their tenants on these efforts to achieve the performance targets.

**Response to Comment 1-6:**

There are no requirements in the MOUs for scrapping old equipment. However, for tracking purposes, airports are required to report information on the retirement and sale of equipment reported in CARB's DOORS system and identify any pre-Tier 4 diesel and pre-2010 gasoline/LPG GSE relocated to other airports within the Basin.

October 24, 2019

Zorik Pirveysian  
Planning and Rules Manager  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, CA 91765  
zpirveysian@aqmd.gov

Dear Mr. Pirveysian:

Sierra Club is writing to comment on the Facility-Based Mobile Source Measures (FBMSM) for Commercial Airports Memorandum of Understanding (MOU) process, with a specific focus on the Ontario Airport, due to its proximity to several front line communities suffering from freight-related air quality impacts in the South Coast region.

Sierra Club is the nation's oldest and largest grassroots environmental organization with nearly 800,000 members nationwide and 170,000 in California. Sierra Club is dedicated to the protection of public health and the environment and has long been a leading voice for reducing our air pollution and greenhouse gas emissions by reducing the use of fossil fuels.

While Sierra Club is pleased that the airports and South Coast Air Quality Management District (SCAQMD) are working to reduce airport emissions, much work remains. Sierra Club offers the following comments on the MOU process.

**I. NOx Emissions Reductions**

**A. Overall NOx reductions are fairly modest and could be more significant**

The FBMSM for Commercial Airports is expected to achieve 0.52 and 0.38 tons per day of NOx emission reductions in 2023 and 2031, respectively, based on the airports' implementation of AQIP/AQIM measures in the MOUs. Even SCAQMD admits that "these emission reductions are modest" but claims that "there are other AQIP/AQIM measures that

2-1

2-2

airports are implementing that will result in emission reductions that may not be easily quantifiable or SIP creditable.”<sup>1</sup> Sierra Club would like to see more ambitious targets embodied at the Ontario Airport in particular, similar to LAX.

2-2

### **B. Reported NOx reductions figures are inconsistent for Ontario Airport**

The NOx reduction figures for the Ontario airport are not consistent. By way of a few examples:

1. SCAQMD public presentation notes that for Ontario, they expect to achieve 7.83 NOX tpy 2023 reductions, 9.93 tpy reductions in 2031.<sup>2</sup>
2. Preliminary Draft Staff Report at Table 4.1 notes that the GSE Policy alone at Ontario achieves 7.83 NOX tpy reduction by 2023 and 9.93 tpy reduction by 2031.<sup>3</sup>
3. In the Preliminary Draft Staff Report at Table 2.8, it also states that the GSE policy alone at Ontario would achieve 22.66 NOX tpy 2023 reductions, and 46.03 tpy reductions in 2031.<sup>4</sup>
4. In the Draft Ontario AQIP, Table 13 also notes the approximate 22.66 NOX tpy 2023 reduction and 46.03 Tpy reduction by 2031.<sup>5</sup>

2-3

It is thus unclear what NOx reductions the Ontario airport MOU plans to achieve. Is it 7.83 tpy or 22.66 tpy by 2023, and 9.93 tpy or 46.03 tpy by 2031? This is a major discrepancy and Sierra Club hopes to clarify the planned scope of emissions reductions. If the lower figure is

---

<sup>1</sup> Preliminary Draft Staff Report, Facility-Based Mobile Source Measure for Commercial Airports, September 2019, at p. 7, accessed: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/preliminary-draft-staff-report.pdf?sfvrsn=6> [hereinafter “Preliminary Draft Staff Report”].

<sup>2</sup> Presentation, Public Consultation Meeting, Oct 10, 2019, at p. 21, accessed: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/presentation.pdf?sfvrsn=11>.

<sup>3</sup> Preliminary Draft Staff Report, Table 4.1 List of SIP Creditable AQIP/AQIM Measures and Estimated Emission Reduction Benefits, at p. 41.

<sup>4</sup> Preliminary Draft Staff Report, Table 2.8 Summary of AQIP Measures and Initiatives for Ontario Airport, at p. 27.

<sup>5</sup> Draft Air Quality Improvement Plan, Ontario International Airport, September 17, 2019, at p. 20, accessed: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/draft-aqip-ont.pdf?sfvrsn=7> [hereinafter “Draft Ontario AQIP”].

correct, it seems that the Ontario documents would all need to be recalculated, in addition to the overall planned scope of reductions in the south coast area. If the difference is just in what is creditable under the SIP, that should also be stated.

2-3

**II. Ground Support Equipment Replacements Should be Clarified as Permanent**

The Ground Support Equipment (GSE) provisions in the AQIP for Ontario Airport indicate that GSE equipment will be replaced.<sup>6</sup> However, the language about how such equipment will be retired is vague and lacks clarity. The Los Angeles World Airports (LAWA)'s Alternative-Fuel Vehicle Incentive Program, on the other hand, has explicit language discussing equipment scrappage and verifying that equipment is replaced.

The emission reductions associated with these vehicle replacements are expected to be permanent as these new trucks continue their operation at LAWA as specified under the MOU. LAWA commits to submit annual reports to South Coast AQMD with specific operational activity data for these funded trucks. LAWA is also responsible for providing documentation on how the retired vehicles are scrapped or relocated outside of California. The annual reports will thus ensure the permanency of the emission reductions.<sup>7</sup>

2-4

Sierra Club suggests that Ontario use the LAWA's Alternative-Fuel Vehicle Incentive program language, noted above, in its MOU and accompanying documents to ensure permanent emissions reductions.

Moreover, there are generally weak goals for GSE for most of the airport MOUs, with the exception of LAX. This stands in stark contrast to other airports, like SFO, that pledge electric

---

<sup>6</sup> Draft Ontario AQIP at p. 7-8.

<sup>7</sup> Preliminary Draft Staff Report at p. 47.

GSE vehicles by 2021.<sup>8</sup> The current goals are based on fleetwide averages, which will likely result in near zero technologies and not zero emissions equipment. Sierra Club suggests that the Ontario airport and others adopt and implement a GSE fleet emission reduction program and similarly ensure that GSE vehicles are electric by 2021 like SFO.

2-4

III. **Responsibility for Shortfalls in MOU Emissions Reductions Lacks Clear Public Process Requirement**

The MOU language notes that in the event of any shortfall in emissions reductions that the SCAQMD will make up this shortfall with other measures:

Responsibility for Shortfall. The South Coast AQMD shall be solely responsible to make up any emissions reduction shortfalls that may occur in the event that the actual voluntary airport AQIP emissions reduction benefits do not achieve the projected emissions reduction benefits resulting from implementation of the voluntary airport AQIP measures specified in Attachment A. South Coast AQMD will also commit to adopt and submit substitute measures to USEPA to remedy any potential emission reduction shortfall associated with implementation of the AQIP measures identified in Attachment A. The Airport shall have no obligation(s) and/or requirement(s) to implement any substitute measures to remedy any potential emission reduction shortfall associated with implementation of the AQIP measures identified in Attachment A, unless otherwise mutually agreed on by both parties.<sup>9</sup>

2-5

In essence there is no ramification for the Ontario Airport failing to meet its commitments, and the SCAQMD can just decide to substitute other measures in another geographical area or industry for any potential shortfall. While the Preliminary Staff Report

<sup>8</sup> See e.g., SFO Transit First Strategic Initiatives, accessed: <https://www.flysfo.com/environment/transit-first>.

<sup>9</sup> Draft Memorandum of Understanding between the South Coast Air Quality Management District and Ontario International Airport Regarding Ontario International Airport's Air Quality Improvement Plan, September 20, 2019, Section 3 at p. 6, accessed: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/facility-based-mobile-source-measures/draft-mou-ont.pdf?sfvrsn=7> [hereinafter "Draft MOU"].

indicates that in the case of a shortfall, the SCAQMD would adopt a public process to discuss potential measures that the agency would undertake, this language is missing from the MOU itself:

*In the event that the actual emission reductions from the implementation of the AQIP/AQIM measures specified in the MOUs are less than the projected emission reduction benefits, South Coast AQMD will be responsible for achieving the reduction shortfall. In such instances, South Coast AQMD also commits to adopt and submit substitute measures to EPA working with the airports and other stakeholders. A public process will be initiated to facilitate the consideration of potential new or enhanced programs, or better efforts to quantify existing programs, to help South Coast AQMD meet any shortfall. (emphasis added.)<sup>10</sup>*

2-5

Sierra Club recommends adding the above language to the draft MOU itself, either in Section 3 on page 6-7 discussing responsibility for shortfalls, or in Section 2 on the MOU public process on page 4. A public process would be important in that scenario to ensure that emissions reductions would occur in a similar location, either at the airport or in another sector in order to be assured that local residents see a benefit to this MOU program.

#### **IV. Third Party Enforcement Provisions in MOUs are Lacking**

Section C1(e) of the Draft MOU notes that “[t]he Parties specifically disavow any desire or intention to create any third-party beneficiary under this MOU, and specifically declare that no person or entity shall have any remedy or right of enforcement.”<sup>11</sup> Yet, at the same time, the Draft MOU also highlights:

2-6

4. Responsibility to Community. The MOU supports and is made in recognition of the importance of ONT to the economic health and well-being of the communities surrounding ONT and the importance of balancing the needs of the City of Ontario, County of San Bernardino and other surrounding

<sup>10</sup> Preliminary Draft Staff Report, at p. 6.

<sup>11</sup> Draft MOU at p.4, Section C(1)e.

communities for adequate commercial air transportation facilities with environmentally responsible air transportation operations at ONT.”<sup>12</sup>

Sierra Club expresses its disappointment that an agreement intended to protect the well-being of the community is not enforceable by that same community and therefore recommends striking this provision from the MOU.

2-6

Sierra Club thanks you for consideration of its comments and is available to answer any questions.

Sincerely,

/s/ Jessica Yarnall Loarie

Jessica Yarnall Loarie  
Senior Attorney  
2101 Webster Street, Suite 1300  
Oakland, CA 94612  
(415) 977-5636  
jessica.yarnall@sierraclub.org

/s/Carlo De La Cruz

Carlo De La Cruz  
Senior Campaign Representative  
714 West Olympic Blvd, Suite 1000  
Los Angeles, CA 90015  
(213) 387-6528 x231

cc: Sang-Mi Lee, Program Supervisor, slee@aqmd.gov

---

<sup>12</sup> Draft MOU at p. 2.



**Responses to Comment Letter from the Sierra Club**  
**(Comment Letter 2)**

**Response to Comment 2-1:**

Staff appreciates the comment letter received from the Sierra Club and its participation at public meetings related to the FBMSM for Commercial Airports.

**Response to Comment 2-2:**

The AQIPs/AQIM represent the airports' best efforts to develop measures for reducing non-aircraft mobile source emissions and the measures that are eligible for SIP credit will be implemented through the voluntary MOUs with South Coast AQMD. During the MOU development process, staff repeatedly requested that airports consider the most stringent performance targets that were technically feasible and cost-effective.

Although the overall projected NO<sub>x</sub> reductions from the MOUs are modest (i.e., 0.52 tpd in 2023 and 0.37 tpd in 2031), they represent about 53% and 66% reductions from the GSE category, which are significant. The AQIPs/AQIM include other measures that the airports are implementing that will result in emission reductions but those measures are not included in the MOUs because they are not easily quantifiable or do not meet U.S. EPA's stringent requirements for SIP credit. Thus, the implementation of the AQIPs/AQIM is expected to yield additional reductions beyond 0.52 and 0.37 tons per day in 2023 and 2031, respectively, and we encourage the airports to continue to evaluate their programs and seek additional feasible and cost-effective emission reductions.

**Response to Comment 2-3:**

The presentations made by the airports, AQIPs/AQIM, and Chapter 2 of the staff report all reference emission reductions that were estimated by the airports. The apparent discrepancy arises when comparing the estimated emission reductions by the airport to the corresponding SIP credit calculated by South Coast AQMD in Chapter 4 of the staff report. It should be noted that the projected emission reductions in Chapter 4 account for the portion of the reductions that are considered SIP creditable based on the 2016 AQMP emissions inventory currency. To further clarify, 22.66 tpy is based on calculations performed by Ontario Airport, while 7.83 tpy is calculated by South Coast AQMD as SIP credit (based on SIP inventory) and is included in our enforceable commitment. Please refer to Appendix B of the staff report for an explanation of the SIP credit calculations for all MOU measures.

**Response to Comment 2-4:**

The revised MOU Schedule for GSE includes additional reporting requirements to document the sale or retirement of equipment. Additionally, any relocation of pre-Tier 4 diesel and pre-2010 gasoline/LPG GSE to another airport within the South Coast Air Basin is required to be reported including the name of the airport, date of relocation, and estimated projected usage hours. The performance target for the GSE measure represents the existing mix of GSE fleet at the airport

and represents what the airport deems feasible to achieve by 2023 and 2031. Staff will review the annual reports and emissions inventory submitted by the airport to track progress in implementation of this measure, including the reported information on the replaced equipment, and make all the information publicly available. South Coast AQMD will continue to encourage the airports to improve their programs by seeking additional feasible and cost-effective strategies.

**Response to Comment 2-5:**

Although the performance targets in the MOU measures and the corresponding emissions reductions associated with implementation of these measures are expected to be achieved, South Coast is fully committed to address any potential emission reduction shortfall through a public process, and develop substitute measures as required by U.S. EPA, as specified in the Resolution. We encourage Sierra Club to continue to participate during development of any potential future substitute measures.

**Response to Comment 2-6:**

While the MOU is not enforceable by the community, South Coast AQMD's enforceable commitment to achieve the projected emission reductions will be incorporated into the SIP and thus that commitment is enforceable by the community.