

# JOHN WAYNE AIRPORT

## **South Coast Air Quality Management District Memorandum of Understanding Biannual Progress Report**

June 1, 2020

JOHN WAYNE AIRPORT  
ORANGE COUNTY



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**South Coast Air Quality Management District**  
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## **1.0 Introduction**

John Wayne Airport, Orange County (SNA) (“JWA” or “Airport”) is pleased to submit this bi-annual progress report as requested by the South Coast Air Quality Management District (“South Coast AQMD”).<sup>1</sup> On December 6, 2019 a Memorandum of Understanding (“MOU”) was entered into by the South Coast AQMD and the Airport, acting by and through the County of Orange, California (“County”) in its capacity as the proprietor and certificated operator of JWA. The purpose of this bi-annual progress report is to provide an interim report concerning the progress on the MOU measures. There are three measures in the JWA MOU, as related to non-aircraft commercial passenger airport mobile sources. The progress on each of these measures are addressed below.

The Airport has been working to develop and implement these measures, however, in February 2020, the novel coronavirus (COVID-19) emerged and significantly disrupted virtually all aspects of life and commerce throughout the world. In response to COVID-19, demand for domestic and international air travel has drastically decreased to unprecedented levels and the outlook for recovery remains uncertain. This has forced airports, airlines, ground support equipment (“GSE”) operators, and many related third parties to evaluate capital plans and allocation of resources. Many airlines, GSE operators, and third parties have suspended capital expenditures, such as GSE purchases, for the foreseeable future, while focusing available resources on the response to COVID-19. Given these developments the airports will continue planning with airlines and third parties, but actual plans may be delayed based on the extent and duration of the virus pandemic and impact on air travel.

## **2.0 Progress on MOU Measures**

### **2.1 MOU Schedule No. 1 – Ground Support Equipment (GSE)**

MOU Schedule No. 1 is a measure for ground support equipment<sup>2</sup>. The measure requires that all GSE associated with commercial operations achieve a fleet average NO<sub>x</sub> emission factors of 1.7

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<sup>1</sup> A second progress report will be submitted by December 1, 2020. Subsequent reports will be provided as stated in the MOU.

<sup>2</sup> Ground Support Equipment or “GSE” is any vehicle or equipment used to support aircraft operations that is subject to, or included in compliance plans to meet, the requirements of the California Air Resources Board (CARB) In-Use Off-Road Diesel (ORD) Vehicle Regulation Program, CARB Off-Road Large Spark-Ignition (LSI) Engine Fleet Requirements Regulation Program, or CARB Portable Equipment Registration Program and associated Portable Diesel Engine Airborne Toxic Control Measure. Furthermore, GSE as defined here only includes equipment that is not subject to compliance with SCAQMD Rule XX – RECLAIM, or included in a mobile source emission reduction credit program under SCAQMD Rule XVI.

and 0.9 grams per brake horsepower hour (g/bhp-hr) by January 1, 2023 and 2031, respectively. To achieve this measure, the Airport will and has been working with Airport tenants to achieve the performance targets by specified dates through accelerated turnover to cleaner equipment. As part of this bi-annual progress report, we have included information regarding the overall background on the Airport's efforts in working with the airlines to make progress on this measure.

### **2.1.1 Description of GSE Fleet Maintenance and Replacement Considerations**

Airlines and air cargo handlers require a wide variety of GSE to support aircraft ground operations and are essential to ensuring the safety and efficiency of the air transportation system in California (and across the National Airspace System). In certain cases, airlines and cargo operators own, operate, and maintain their own GSE fleets. In other cases, airlines contract fixed base operators (FBOs) or ramp service providers to handle GSE operations. In either case, GSE operators continuously maintain, repair and replace GSE to keep the fleet operational and meet the needs of the aircraft operations. In addition, GSE operators in California must repower or replace older units in order to keep their state-wide fleets in compliance with the California Air Resources Board (CARB) In-Use Off-Road Diesel-Fueled Fleets Regulation, CARB's Large Spark Ignition (LSI) Rule, the Portable Equipment Air Toxics Control Measure (ATCM) and Portable Equipment Registration Program (PERP). This requires complex coordination among managers at each airport and at the corporate level to ensure compliance with environmental requirements while maintaining operational capacity and economic viability.

Over time, GSE fleets are turned over as older pieces of equipment are replaced with newer models. GSE typically has a useful life span of approximately 20 (but ranging up to 30) years depending on the equipment type, maintenance routine, and workload of each unit. When reaching the end of its useful life, equipment is typically scrapped for parts and removed from the fleet. This equipment is then replaced with a new model. New GSE can also be added to a fleet to accommodate new operations (such as cargo vs. passengers) or meet increased demand. Furthermore, GSE operators may purchase multiple units at once for economic reasons. With hundreds of pieces of equipment at each airport and thousands across the state, GSE fleets are an ever-changing mix of new and aging equipment.

As GSE fleets are turned over, they typically have lower average nitrogen oxides (NOx) emission rates. Newer models of combustion engines generally have lower NOx emission rates compared to their older counterparts. In addition, some new equipment can be powered with zero-emission (ZE) or near-zero-emission (NZE) technology.

### **2.1.2 Description of GSE Electrification Considerations**

Electric GSE has become more widely available and deployed over the past 10-20 years. Certain types of GSE, such as baggage and cargo tractors and belt loaders are more amenable to electrification as they have relatively low power requirements and manageable duty cycles. Other types of GSE, including aircraft push backs / tow tractors, cargo loaders and ground power

units (GPUs), are less suited for electrification due to their operational demands. In all instances, however, the viability of operating electric vehicles depends on access to adequate on-airport (e.g., charging) and off-airport (e.g., generation) infrastructure and airport configuration (e.g., distances and grades). These factors may vary even within airports and each GSE operator must assess the viability of electric GSE in the context of their operational needs and constraints.

Airlines and other GSE operators have been supportive of efforts to expand the use of electric GSE for many years. In the South Coast AQMD, airlines and other GSE operators, with the support of their airport partners, have effectively implemented electric GSE at all five commercial airports. They have established procedures and plans to increase utilization of electric GSE, utilized grant funding and incentive opportunities to procure additional electric GSE and install electric vehicle charging infrastructure. This historical implementation of these procedures and plans has resulted in widespread use of electric GSE, notably baggage and cargo tractors and belt loaders. Furthermore, airlines and airports have partnered to provide continued gate electrification at passenger terminals to significantly reduce the use of diesel-powered GPUs. As time moves forward, airlines expect to continue to increase the presence and use of electric GSE consistent with the existing procedures and plans and the airports MOU, to further reduce emissions and meet ever-tightening regulatory requirements.

### **2.1.3 Progress to Date**

In early 2020, the Airport worked with airlines and GSE operators at each airport in the District to begin planning for implementation of the MOU between SCAQMD and each airport. The airports understand that the airlines have been planning for and taking the following steps:

- Assessment of the GSE fleet at each airport
  - Evaluation of GSE status and identification of equipment that may need to be replaced
  - Key factors: age, performance, historical trends
- Evaluation of available cleaner burning and electric GSE
  - Communication with vendors
- Budget planning for future GSE capital expenditures for replacements
  - Economic projections, coordination with airports on infrastructure
  - Grants and economic incentives
- Evaluation of infrastructure needs
- GSE operators and airports in process of developing an inventory of airside electric vehicle charging infrastructure to evaluate infrastructure upgrades to accommodate electric vehicle quantities needed to meet 2023 and 2031 emission targets.

At JWA, we have also continued to evaluate how we can help ensure that the airlines and GSE operators can meet these targets. Our efforts have included:

1. Review of contract terms to ensure that the MOU targets are identified.

2. Review of electrical infrastructure to ensure that the necessary capacity is available.
3. Outreach to airlines to identify potential infrastructure issues.

Based on current assessments, JWA infrastructure is able support GSE electrical demands for the airlines and third parties. We will remain in communication with airlines and third party GSE operators to encourage the continued conversion of GSE.

## **2.2 MOU Schedule No. 2 – Jet Fuel Delivery Truck Commitments**

MOU Schedule No. 2 is a measure for commercial passenger airline jet fuel delivery trucks. The measure requires that the Airport install a jet fuel pipeline by the end of 2019 and eliminate routine commercial aviation jet fuel delivery trucks by January 1, 2023. The Airport will work with third parties to complete the jet fuel pipeline installation and work with tenants to eliminate routine commercial passenger jet fuel truck deliveries.

### **2.2.1 Progress to Date**

The jet fuel pipeline has been installed and began operating in October 2019. The Airport has been working with the third parties to switch to fuel delivery via the pipeline. The majority of routine jet fuel truck deliveries have been replaced with pipeline fuel delivery as of the date of this bi-annual progress report. Currently, fuel is still delivered via truck to two small commercial airlines due to contractual obligations. One of these contracts is scheduled for renewal before the end of 2020. JWA is working with this airline and the third party pipeline vendor during the contract renewal period in an effort to eliminate the use of jet fuel delivery trucks, and maximize delivery through the pipeline system.

JWA is also working with third parties to develop a fuel delivery tracking system for delivery of fuel by pipeline as well as by tanker truck. The third parties have agreed to a tracking system which will consist of recordkeeping forms that will be completed and submitted to JWA periodically. JWA intends to perform a quality assurance review of the information received, then compile for use in the annual reporting. Currently, JWA is reviewing the detailed information that can be supplied by the third parties; this information will be used to develop the annual emission inventories to be submitted to the South Coast AQMD. Weekly correspondence has occurred with the third parties through the month of May 2020, in an effort to finalize and test the tracking system.

## **2.3 MOU Schedule No. 3 – Parking Shuttle Bus Electrification Commitments**

MOU Schedule No. 3 is a measure for shuttle bus (off airport employee and passenger parking lots) electrification. The measure requires that the Airport 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 January 1, 2023 and 2031, respectively. The Airport may continue to reserve non-battery-electric shuttle buses for standby and emergency use.

### **2.3.1 Progress to Date**

At this time, JWA has no regular shuttle service, and even as air travel increases JWA anticipates decreased demand due to changes in passenger travel habits. JWA will continue moving forward with shuttle fleet changeover to zero emission while evaluating future shuttle demand.

JWA has solicited bid requests and is currently reviewing and negotiating the purchase of three electric shuttle buses. As part of this effort, JWA has been actively engaged with multiple electric shuttle bus vendors and has tested electric buses on the bus routes. JWA has identified the areas for infrastructure improvements to support the buses and new charging stations. Correspondence with the local utility has occurred in an effort to determine and coordinate the means and timeframes for the infrastructure changes (i.e., space allocations, electric drops, cable runs, etc.).

JWA was approved in 2019 for Federal Aviation Administration (FAA) Zero Emission Vehicle (ZEV) grant funding support for the purchase of three electric shuttle buses. Unfortunately, JWA's pre-application to receive FAA ZEV funding in 2020 for the purchase of three additional electric shuttle buses was denied. JWA intends to submit another application for 2021 FAA ZEV funding. Other potential grants are also being reviewed and pursued.

JWA expects to place the order for the first three buses this year and a second order, as determined by shuttle demand, in time to meet the 50% zero emission obligation.