



## **Preliminary Emissions Inventory Estimate for Commercial Airports**

### **Background**

The objective of this document is to provide a rough estimate of the baseline emissions of nitrogen oxides (NO<sub>x</sub>) in 2023 that could be affected by any potential commercial airport-specific facility-based measures. The estimated emissions values described in this document are not intended to be final values used for the State Implementation Plan or for regulatory purposes. Instead, they are intended only as a point of reference to guide future strategies, policies and/or rules aimed at reducing emissions from commercial airport-related activities in the Basin. More detailed emissions inventories for this facility category will be developed in future public processes for any specific measure that will be used to obtain SIP credit (such as a regulation, MOU, etc.) and for future Air Quality Management Plans.

### **NO<sub>x</sub> Emissions Inventory for Commercial Airports**

The estimate presented here relies on the substantial work that has previously been conducted to estimate airport-related NO<sub>x</sub> emissions, including the most recent emission inventory reports prepared by the Los Angeles World Airports for Los Angeles International (LAX) and Ontario Airports, the settlement agreement EIR prepared for John Wayne Airport, an aircraft report prepared by an independent consultant and work performed by CARB staff for the 2016 Air Quality Management Plan (AQMP) emissions inventory. The table and chart below provide a summary of the overall NO<sub>x</sub> emissions inventory for the following source categories: aircraft (and associated auxiliary power units), on-road light- and heavy-duty vehicles, and ground support equipment (GSE).

### **Methodology for Estimating 2023 NO<sub>x</sub> Emissions from Commercial Airports**

#### **Aircraft**

A 2016 SCAQMD-sponsored study (Integra, 2016) used local airport activity data applied to FAA's Emissions and Dispersion Modeling System (EDMS) and EPA's average emission factors to estimate emissions from aircraft, including auxiliary power units (APUs). The results of this study were incorporated into the 2016 AQMP. The 2023 emissions for each airport were extracted directly from the 2016 AQMP inventory.

#### **On-Road Emissions**

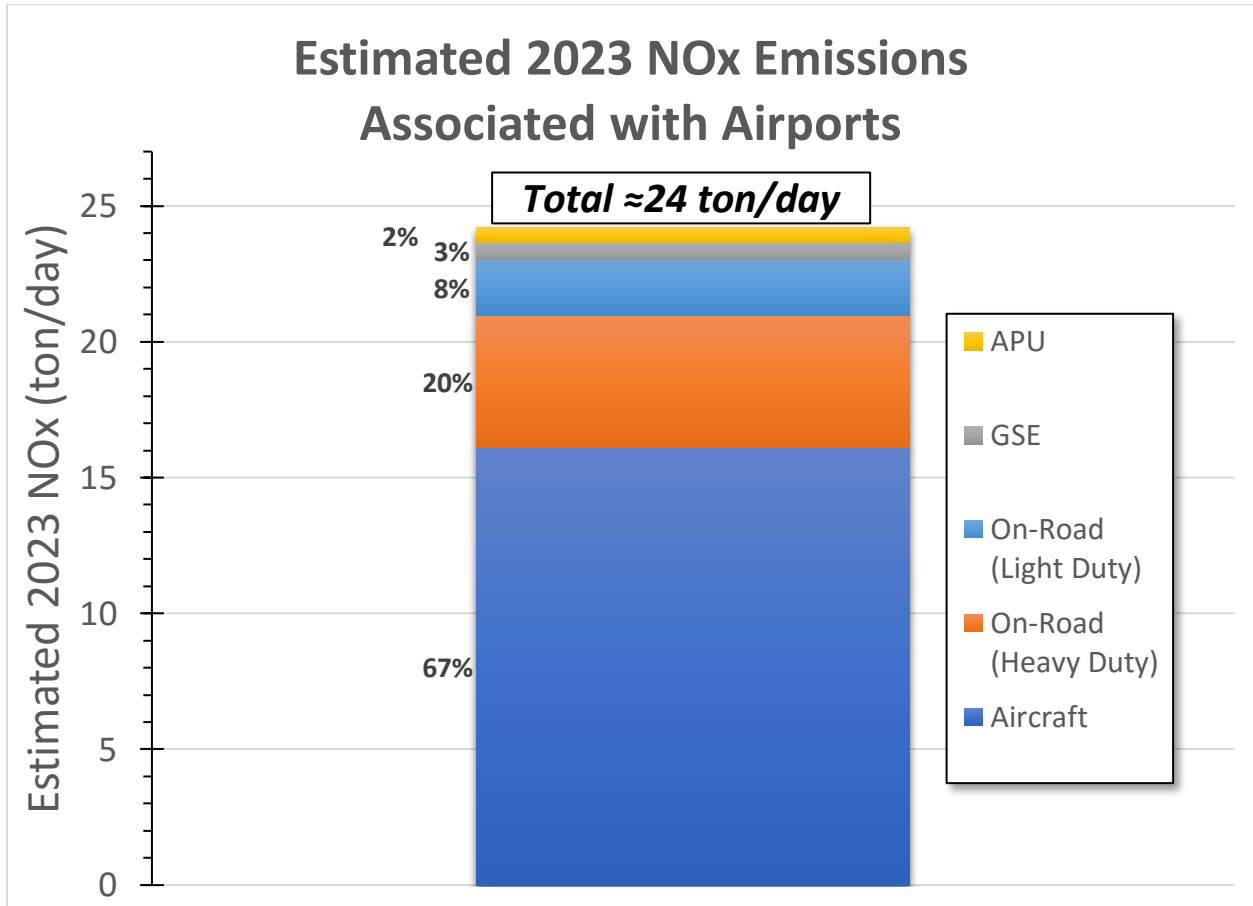
Airport-related vehicle emissions, including light-duty and heavy-duty vehicles, were estimated in reports prepared for LAX and Ontario airports (CDM, 2014). Activity data was also obtained from the John Wayne Airport settlement agreement EIR (County of Orange, 2016) and the Burbank Terminal Replacement EIR. Base and future year landing take-off operations (LTO) for the five commercial airports were estimated from the consultant report prepared to estimate aircraft emissions for the 2016 AQMP (Integra, 2016). A rough estimate of 2023 emissions was calculated from these data sources by linear interpolation of milestone years or by using LTO estimates. Emissions from Burbank and Ontario per LTO were used as a surrogate to estimate from Long Beach airport since no estimates were available for this airport.

#### **Ground Support Equipment**

The 2023 NO<sub>x</sub> emissions inventory for GSE are derived from the data sources used for on-road emissions and the values calculated by CARB for the 2016 AQMP.



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Vehicle Type	2023 NOx (tons/day)
On-Road (Light Duty)	2.0
On-Road (Heavy Duty)	4.9
GSE	0.6
APU	0.5
Aircraft	16.1
<b>Total</b>	<b>~24</b>

**References**

- CDM Smith, Los Angeles (LAX) International Airport and Ontario Airport 2012 Airport-Wide Emissions inventory, Project No. 103974 and 104804, Prepared for Los Angeles World Airports; April and May 2015
- County of Orange, Draft Environmental impact Report No. 617 John Wayne Airport Settlement Agreement
- Integra Environmental Consulting, Inc., 2016. Technical Assistance Related to Emission Inventories, Goods Movement and Off-Road Sources, Updated Aircraft Emission Inventory; August 2016.