

# Aircraft Forecast & Fleet Mix

## South Coast AQMD 2022 AQMP

Presented to: 2022 AQMP Aircraft Working Group

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**Federal Aviation  
Administration**

# Topics that affect aircraft NOx emissions estimates

- **FAA Terminal Area Forecast**
- **Fleet Mix**

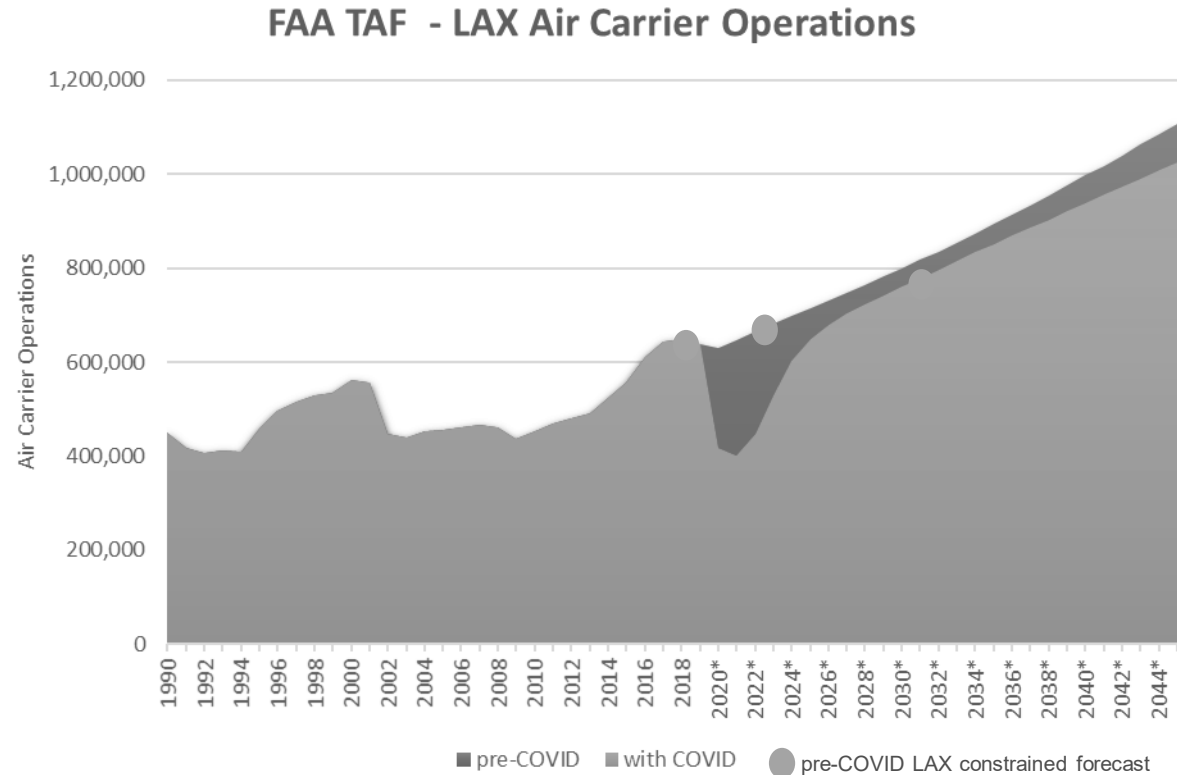


# FAA Terminal Area Forecast

- **Public planning tool**
  - Historic data + demand-driven forecast
    - Updated annually
  - Predicts Enplanements (passengers)
  - Predicts Operations for 4 Aircraft Categories:
    - Air Carrier, Air Taxi, General Aviation, Military
      - Scheduled & Local
  - Based on trends, local & national economic factors, airline data, airport reports, Bureau of Transportation Statistics, etc.
  - Constrained and unconstrained

# TAF – COVID effects, LAX example

- TAF forecast is unconstrained
- Defer to the airport to modify forecasted aircraft activities according to real-world circumstances



# Fleet Mix

- **Aircraft / Engine combinations**
  - Allow for a more accurate NOx emissions inventory
  - Reflect the best representation of airlines future fleet operations based on
    - Announced aircraft/engine purchases
    - Aircraft retirements
    - Aircraft registrations
    - Markets served



# Example Fleet Mix Changes



B747-8



B777-9

-55% NO<sub>x</sub>



B767-300



B787-900

-4% NO<sub>x</sub>



A320 neo



A320 neo

-28% NO<sub>x</sub>



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# Summary

- **Two ways to improve the accuracy of NOx emissions in the SIP are:**
  - Incorporate COVID effects into the forecast
  - Select representative airframe/engine combinations





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## **Input on Draft Emissions Inventory and Emissions Reduction “Strategies” Discussed to Date**

**South Coast Air Quality Management District – Aviation Working Group Meeting #3  
June 8, 2021**

**Tim A. Pohle – Sr. Managing Director, Environmental Affairs**



## About A4A

A4A is the principal trade and service organization of the U.S. airline industry with its membership and regional partners accounting for more than 90% of U.S. airline passenger and cargo traffic

## MEMBER AIRLINES



ASSOCIATE MEMBER AIRLINE: AIR CANADA 



## **A4A and Members Committed to Environmental Progress**

**Safety is our number one priority** – we view responsible environmental stewardship as essential to our business and embrace the need to work proactively to address environmental concerns and achieve concomitant public health objectives

### **A4A Recognizes the Need to Attain the NAAQS and Fully Supports Efforts to Achieve the NAAQS**

- Long history of working with the District and California Air Resources Board to achieve emissions reductions.
- Includes cooperating in development of suite of CARB regulations applicable to Airport Ground Support Equipment
- Also includes support for Airport-District MOUs reached in 2016 AQMP process

### **March 30, 2021, A4A Adopted New, Very Ambitious Climate Goals**

**Near Term** – Maintain *existing carbon-neutral growth goal* relative to 2019 baseline (accounting for COVID19 downturn)

**Medium Term** – **2030 SAF Goal:** 2 billion gallons of cost-competitive *Sustainable Aviation Fuel (SAF)* supply in 2030

**Long Term** – **2050 NZC Goal:** *Net-zero carbon emissions by 2050*



## District's Draft Emissions Inventory

- **Projected Levels of Aircraft Operations:**
  - Impacts of COVID-19 need to be taken into account
  - Airline recovery is underway, return to traffic growth expected in longer term
- **Projected Aircraft-Engine Configurations:**
  - Current Draft Inventory projection of operations appears to include aircraft-engine configurations in future years that are not expected to be operated in those years
  - Need to reflect changes in aircraft fleet mix resulting from COVID-19 (accelerated retirements of older, less fuel-efficient aircraft)
- **Need for District to Establish Process for Review of Inventory and Stakeholder Input**
  - District should define a specific process for updating the Inventory with appropriate stakeholder input



## Emission Reduction “Strategies”

- **Strategies discussed thus far involve aircraft operations (e.g., de-rated takeoffs, single-engine taxiing, APU usage) or aircraft equipage (electrification of APUs) that are beyond District’s (and State’s) regulatory authority**
  - These are not viable options for “control strategies” because they are beyond District / State authority to control
- **Generally, airlines already maximize use of operational “strategies” to reduce fuel consumption / aircraft maintenance**
  - Viable approach could be to support measures that could increase use of these “strategies” – e.g., airport infrastructure needed to support
  - Support R&D of emission-reducing aircraft/engine technologies
  - Support development/deployment of innovative taxiing concepts
- **Use of “Incentives” – the District must better define what it means by incentives and how it would propose to structure such incentives to generate SIP-creditable reductions**
  - Such an approach must be consistent with limitations on District/State authority