

TUESDAY, APRIL 28, 2026

SESSION  
CHAIRS

# Driving Change: Intermodal Freight's Air Quality and Health Challenges and Opportunities



**Jane Lin**

University of Illinois Chicago &  
HEI Heavy-Duty Diesel  
Fleet Turnover Panel



**Albert Presto**

Carnegie Mellon University &  
HEI Energy Review Committee

SPEAKERS



**Michael Roeth**

North American Council  
for Freight Efficiency



**Thomas O'Brien**

CSU Long Beach



**Rachael Nealer**

Atlas Public Policy



**Kanok Boriboonsomsin**

University of  
California, Riverside

# Introduction and Session Overview

Jane Lin, University of Illinois Chicago & HEI Heavy-Duty Diesel Fleet  
Turnover Panel

Albert Presto, Carnegie Mellon University & HEI Energy Review  
Committee

# Chicago is the National Hub for Freight Transportation

**Chicago is a national hub  
with many freight assets**

Metropolitan Chicago freight-related assets

**\$3,000,000,000,000**

roughly the amount of goods that move through our region each year

**10** interstate highways

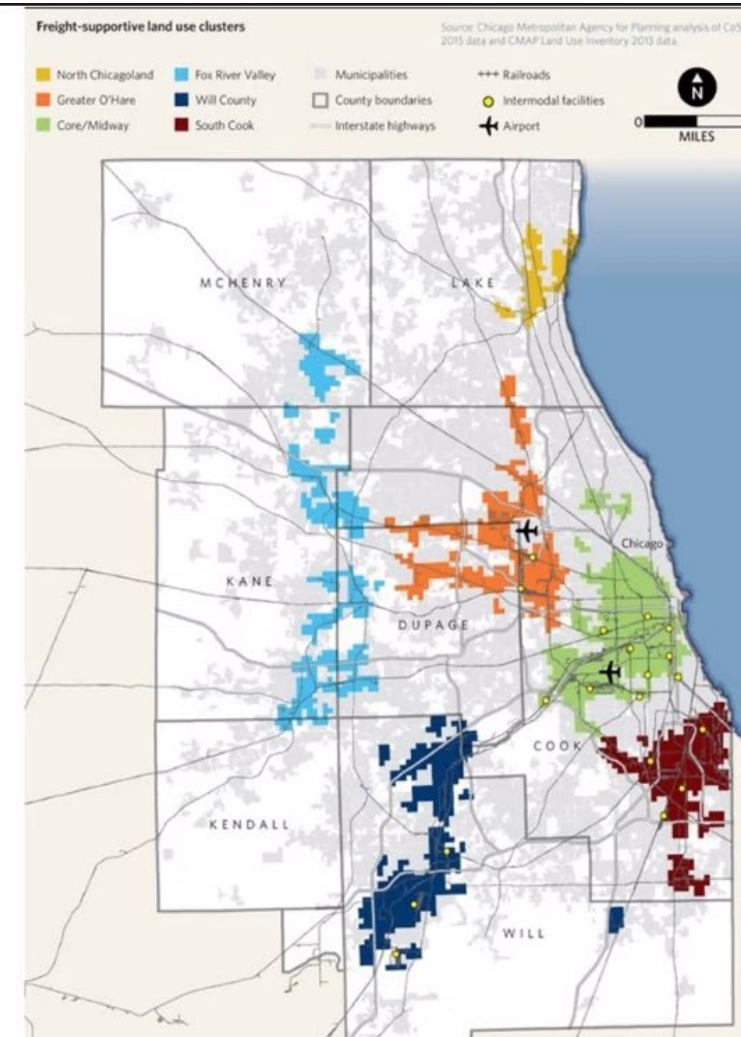
**6** class 1 railroads

**1.1 Billion Ft<sup>2</sup>**

industrial space

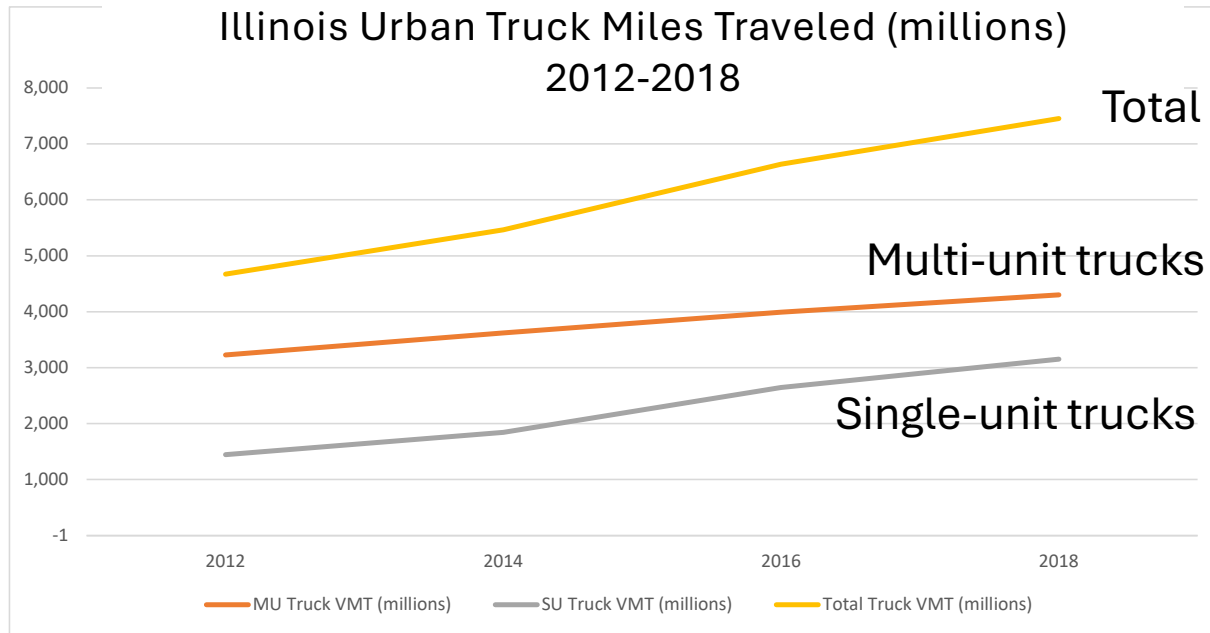
**6th** busiest cargo  
airport in the nation

Source: Chicago Metropolitan Agency for Planning analysis of Costar (2018), Transworld (2017), and Airports Council International (2017) data.

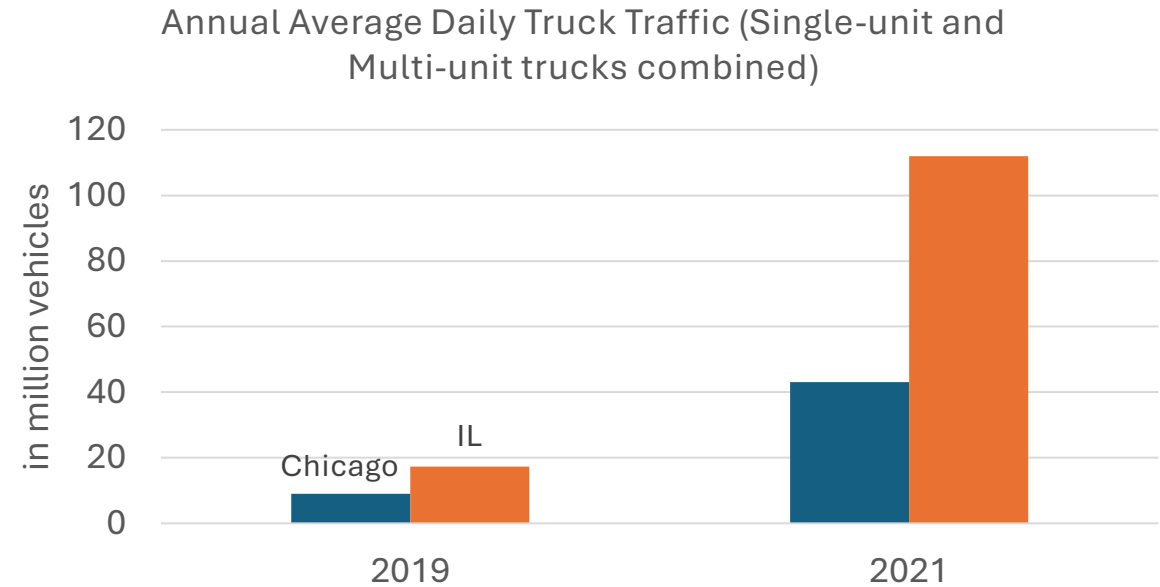


Source: Transport Chicago, 2020

# Truck traffic has gone up in urban areas

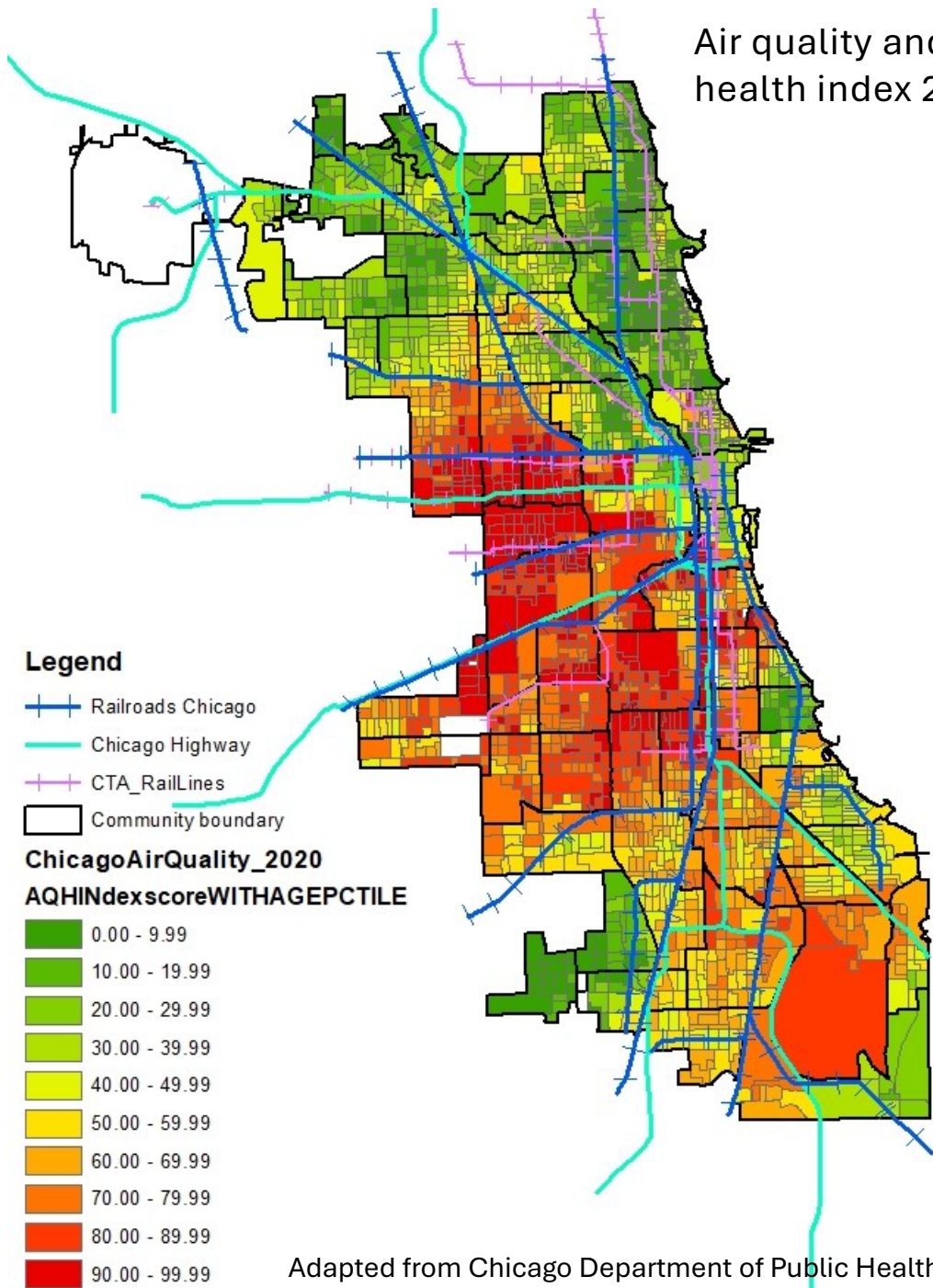


Source: CMAP (Chicago Metropolitan Agency for Planning)

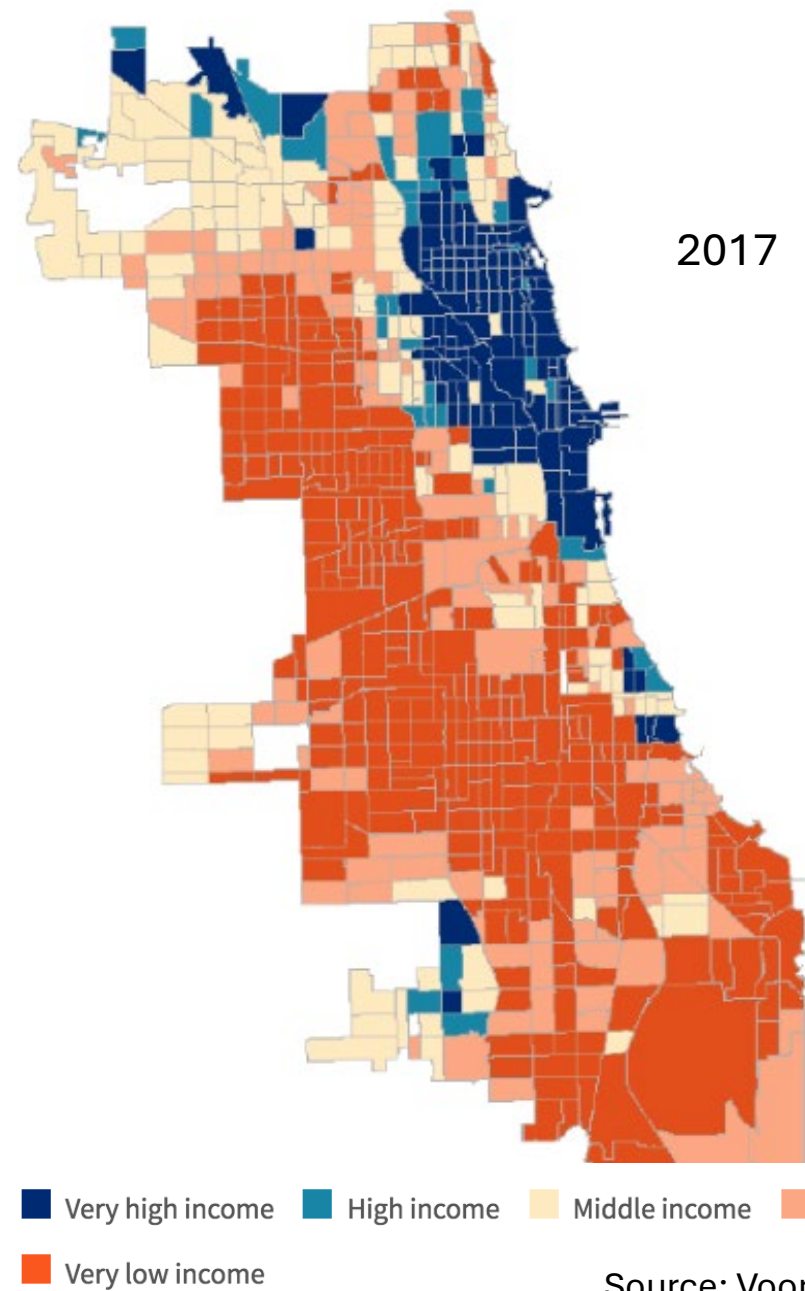


Source: IDOT (Illinois Department of Transportation)

# Air quality and health index 2020



Adapted from Chicago Department of Public Health, 2020



Source: Voorhees Center, UIC

# HEAVY-DUTY DIESEL VEHICLE TURNOVER: SPECIAL PROJECT

---

**Research Question:** What are the potential near-term emissions, air quality, human exposure, or health benefits that could be achieved by replacing older medium- and heavy-duty diesel vehicles in the United States with lower emission vehicles?

**Expected Outcome – A report to inform HEI sponsors and HEI’s future research directions. Report to provide...**

- Landscape of the medium- and heavy-duty diesel vehicle fleet in the United States.
- New research on potential near-term effects of replacing older diesel vehicles.
- Summary of findings and their implications for policy and science.



# Topics Covered by This Panel

- Industry Strategies for Efficient, Low-Emission Freight
  - Michael Roeth, NACFE
- Planning and Infrastructure Considerations for Freight Systems
  - Tom O'Brien, California State University, Long Beach
- Energy and Emissions in Intermodal Freight Networks
  - Rachael Nealer, Atlas Public Policy
- Air Quality and Health Implications of Emerging Trends in Freight Logistics
  - Kanok Boriboonsomsin, University of California, Riverside and HEI Heavy-Duty Diesel Panel

TUESDAY, APRIL 28, 2026

SESSION  
CHAIRS

# Driving Change: Intermodal Freight's Air Quality and Health Challenges and Opportunities



**Jane Lin**

University of Illinois Chicago &  
HEI Heavy-Duty Diesel  
Fleet Turnover Panel



**Albert Presto**

Carnegie Mellon University &  
HEI Energy Review Committee

SPEAKERS



**Michael Roeth**

North American Council  
for Freight Efficiency



**Thomas O'Brien**

CSU Long Beach



**Rachael Nealer**

Atlas Public Policy



**Kanok Boriboonsomsin**

University of  
California, Riverside