

# *The Role of Congestion Management in Aviation*

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Federal Aviation  
Administration



# Summary of Topics

- ✚ **What is Congestion Management and When Should it be Used?**
- ✚ **Goals of Congestion Management**
- ✚ **Current & Prospective use of Congestion Management**

# What Is Congestion Management?

The application of either administrative or market based mechanisms imposed by the government to balance operations at capacity constrained airports when:

- ✓ Market forces are unable to properly respond,
- ✓ Demand for access at an airport persistently exceeds available airport supply and,
- ✓ Capacity cannot be increased in the near term to meet demand

# Congestion Management Alternatives

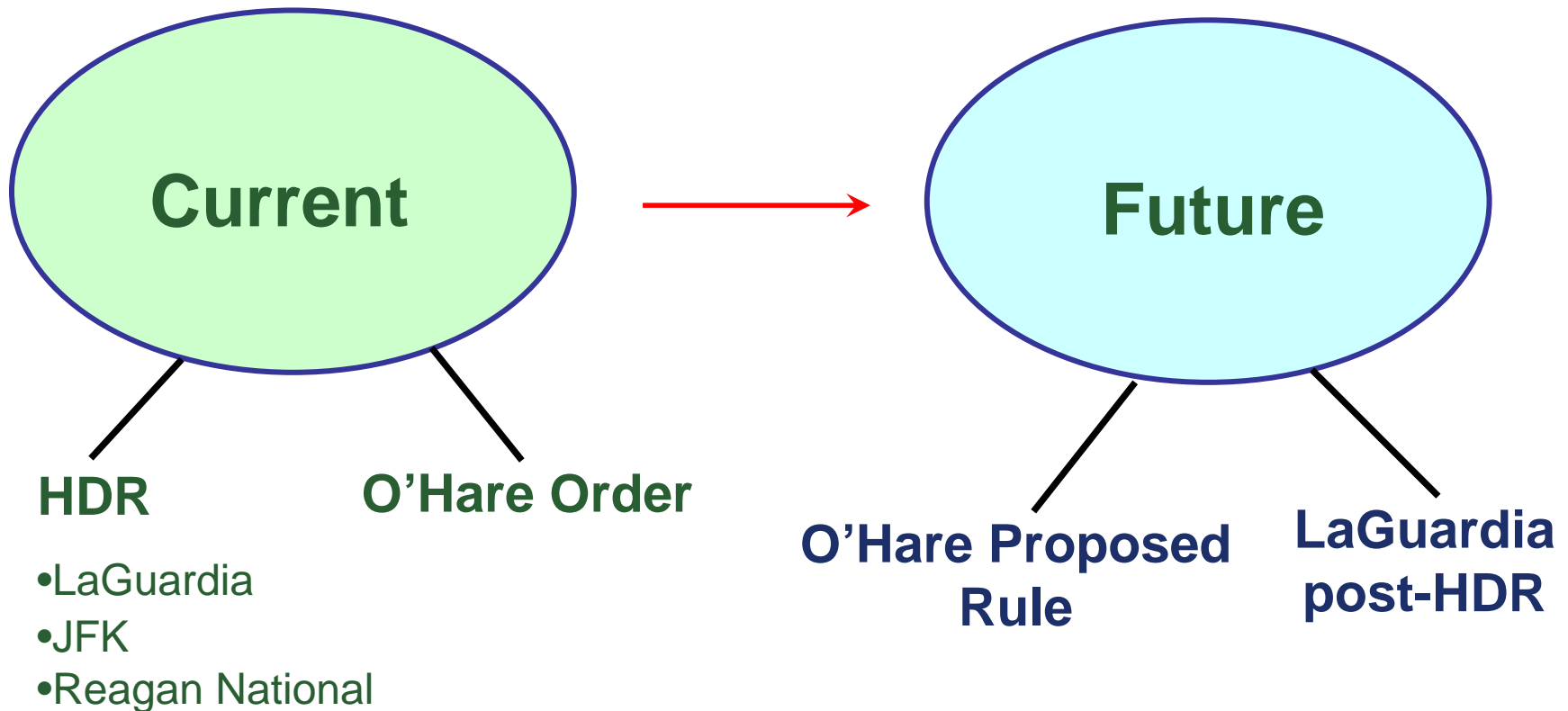
Market-Based	Administrative
<ul style="list-style-type: none"><li>✚ Auctions</li><li>✚ Congestion Pricing</li></ul>	<ul style="list-style-type: none"><li>✚ Administrative Cap</li><li>✚ Upgauging of Aircraft</li></ul>



# Goals of Congestion Management

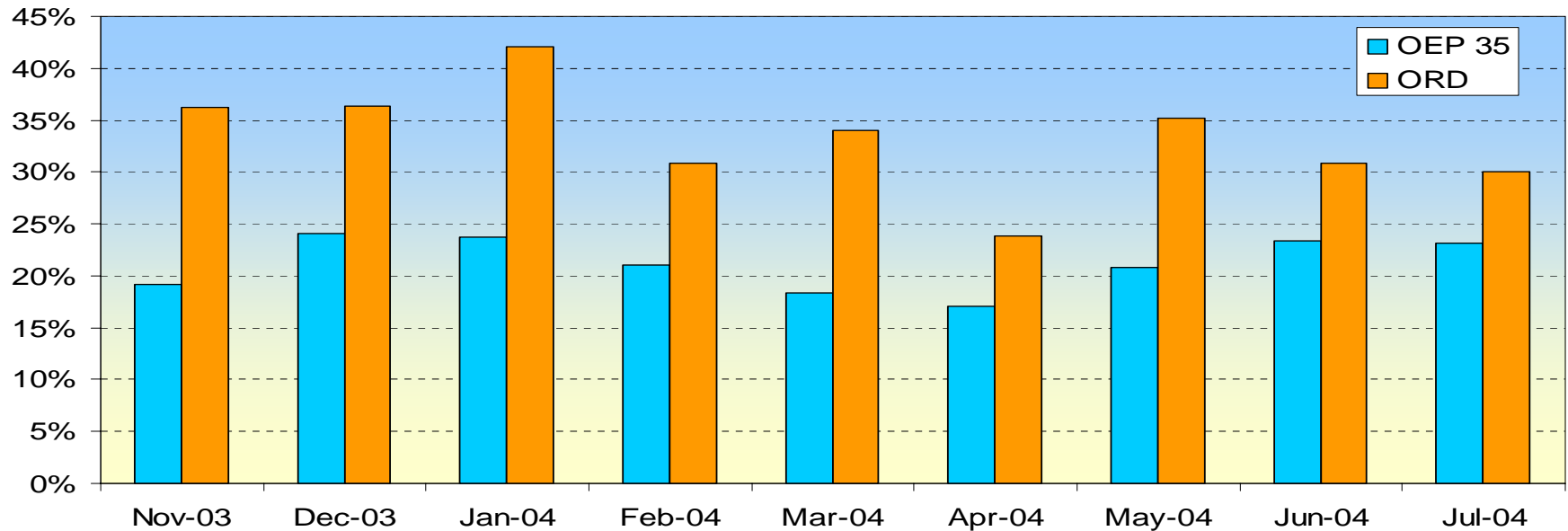
- ★ Mitigate Airport (and NAS) Congestion and Delay
- ★ Support Efficient Allocation and Utilization of Resource
- ★ Encourage Airline Competition
- ★ Promote Greater Passenger Throughput

# Current and Prospective Examples of Congestion Management



# O'Hare Order Limiting Scheduled Arrivals

*Percent of Operations Delayed  
Chicago O'Hare and OEP 35*



Source: ASPM

- ✚ Order caps scheduled hourly arrivals to 88/hour from 7:00 a.m. to 9:00 p.m.
- ✚ Temporary delay reduction measure while engaged in rulemaking

# O'Hare Notice of Proposed Rulemaking

## Main Features of NPRM:



- ✚ Maintain operational cap of 88 arrivals per hour
  - ✚ Preferences for new entrants and limited incumbents
  - ✚ Blind buy/sell and leasing
  - ✚ Seeks Comment on Minimum Usage Requirement
  - ✚ Sunset Rule on April 6, 2008
- \*Phase I of the O'Hare Modernization Program (OMP) is projected to be completed by the end of 2007.**



# HDR At LaGuardia Airport

- ✦ **High Density Rule and AIR-21 Provisions to expire January 1, 2007**
- ✦ **Post-HDR the “Do Nothing” approach is not a viable option**
- ✦ **Extending the HDR is not a preferred alternative:**
  - ✓ Mitigate Airport Congestion & Delay
  - ✗ Efficient Allocation & Utilization of Resource
  - ✗ Encourage Airline Competition
  - ✗ Maximize Passenger Throughput

# Alternatives for LaGuardia Airport After Expiration of the HDR

-  **Administrative Rule**
-  **Auctions**
-  **Congestion Pricing**

# Administrative Options

## Up-Gauging of Aircraft

### Features

- ✚ Operational cap established by FAA Benchmark Report or other FAA measures.
- ✚ Slots would be subject to usage requirement based on aircraft size.
- ✚ A baseline number of slots could be allocated to all carriers to ensure continuity of service. Baseline slots would *not* be subject to the usage requirement.
- ✚ Slots could have finite lives so they would be periodically withdrawn and reallocated, which would encourage new entry and provide access to the airport.
- ✚ Blind secondary market.

# Sample of Research Results on Up-Gauging of Aircraft

- ✚ NEXTOR researched impact of moderate upgauging using TAAM simulation. 12% to 25% of RJs were replaced with larger aircraft, such as B737s.
- ✚ Moderate Upgauging does *not* lead to increased delays.
- ✚ Upgauging could raise passenger throughput at LaGuardia by 3-4 million passengers per year.
- ✚ Moderate Upgauging could be accommodated under current gate configuration at LGA.

# *Market Based Mechanisms*

## **Auction of Landing and Takeoff Rights**

### **Features**

- ✚ Operational Cap established by FAA Benchmark Report or other FAA measures.
- ✚ Simultaneous auction in which airlines can bid on multiple slots.
- ✚ Vouchers could be used to recognize air carrier investments.
- ✚ Auctions could be phased in over time to provide a smooth transitional period.

# Primary NEXTOR Research Results on Auctioning Landing and Takeoff Rights

- ✚ Software can be developed & used to address the difficult problem of selling slots simultaneously at LaGuardia.
- ✚ Benefits include:
  - Operations would be capped, which ensures a certain level of congestion.
  - Likely to generate significant revenue which could be used for capacity expansion projects.
  - Encourages efficient utilization of the airport.
- ✚ Main Constraint: Implementation requires legislation.

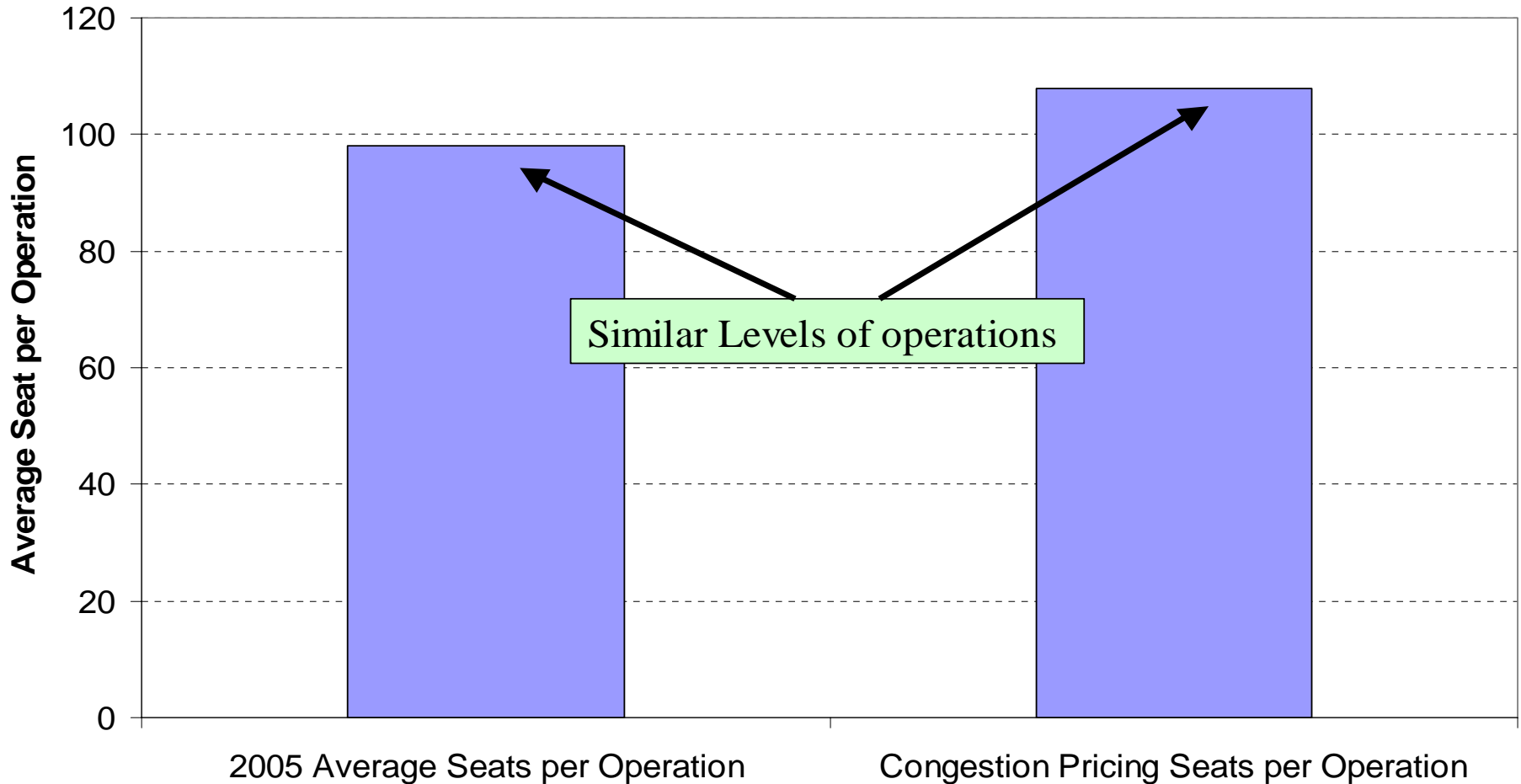
# *Market Based Mechanisms*

## **Congestion Pricing**

### **Features**

- ✚ Congestion fees would be set during the most congested periods of the day.
- ✚ While there would not be an operational cap, a target level of operations would be established at the airport and congestion fees would be set at a level that influences carriers to schedule operations up to the target level.
- ✚ Congestion fees would change as necessary in order to achieve the target level of operations.

# NEXTOR Results Suggest that Congestion Pricing Leads to Upgauging





# Questions

