



# **FACT Plan Update and Capacity**

**Southwest Region Partnership Conference 2005**

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APP-400

March 9, 2005



# Purpose of this Project

- ) **Determine which airports will need additional capacity and why, given the anticipated future demand for air travel**
- ) **Use existing studies when possible**
  - Used existing studies and multiple criteria, including Annual Service Volume (ASV), simulation modeling, and capacity benchmarks
- ) **Develop a “common list” of airports**
  - That have adequate capacity
  - That need additional capacity
- ) **Identify constraints to improving capacity**
  - It did not identify solutions

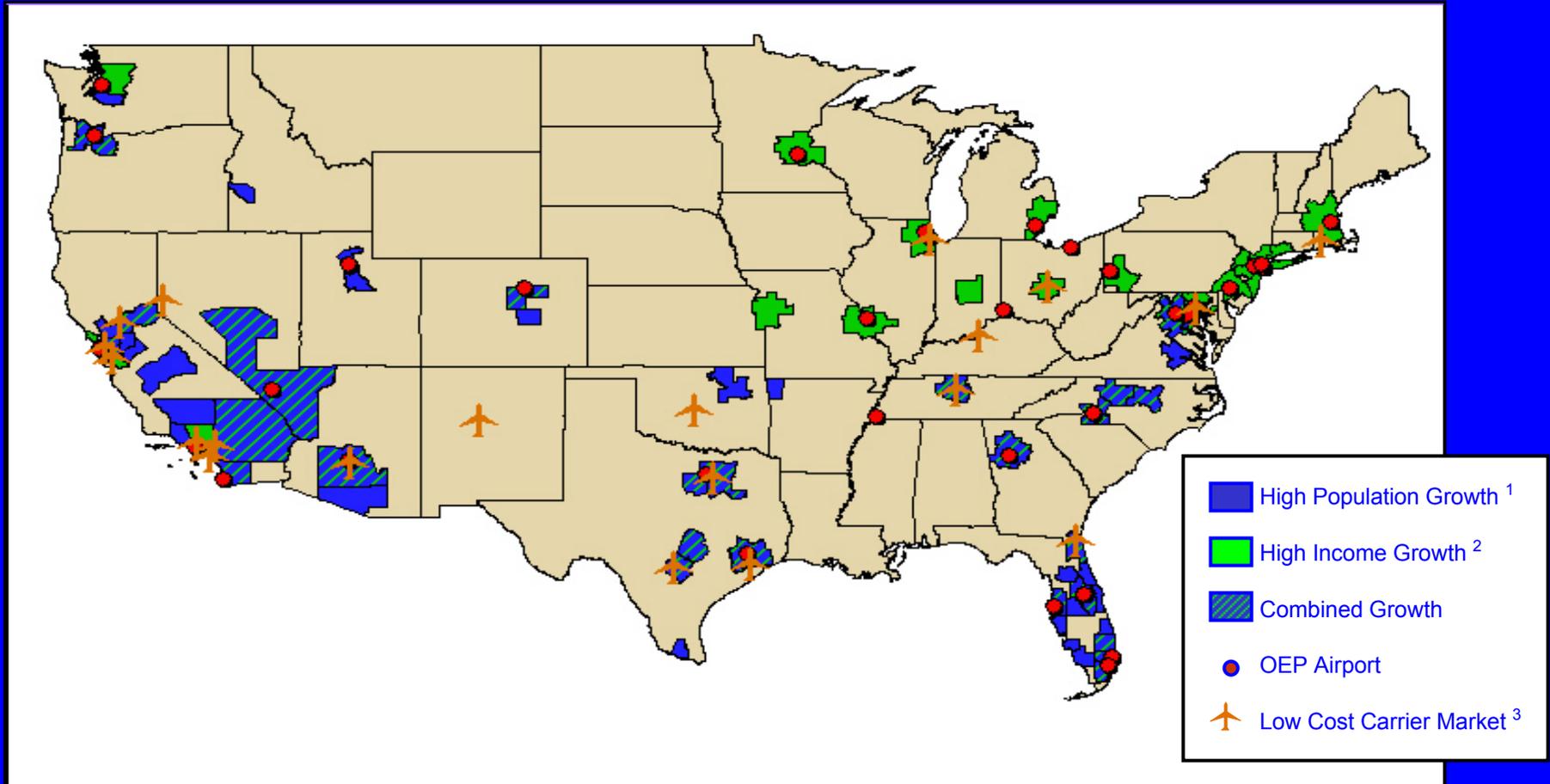


# Overview

- ) **This study identifies airports where additional capacity development may be necessary**
- ) **Different from other studies**
  - Included extensive socio-economic information
  - Evaluated the demand in metropolitan areas
  - Looked at nearly 300 commercial service airports
  - Impact of low cost carriers
- ) **Not a substitute for detailed individual studies**
  - Should be viewed as a minimal list
  - Highlights most obvious potential problem areas



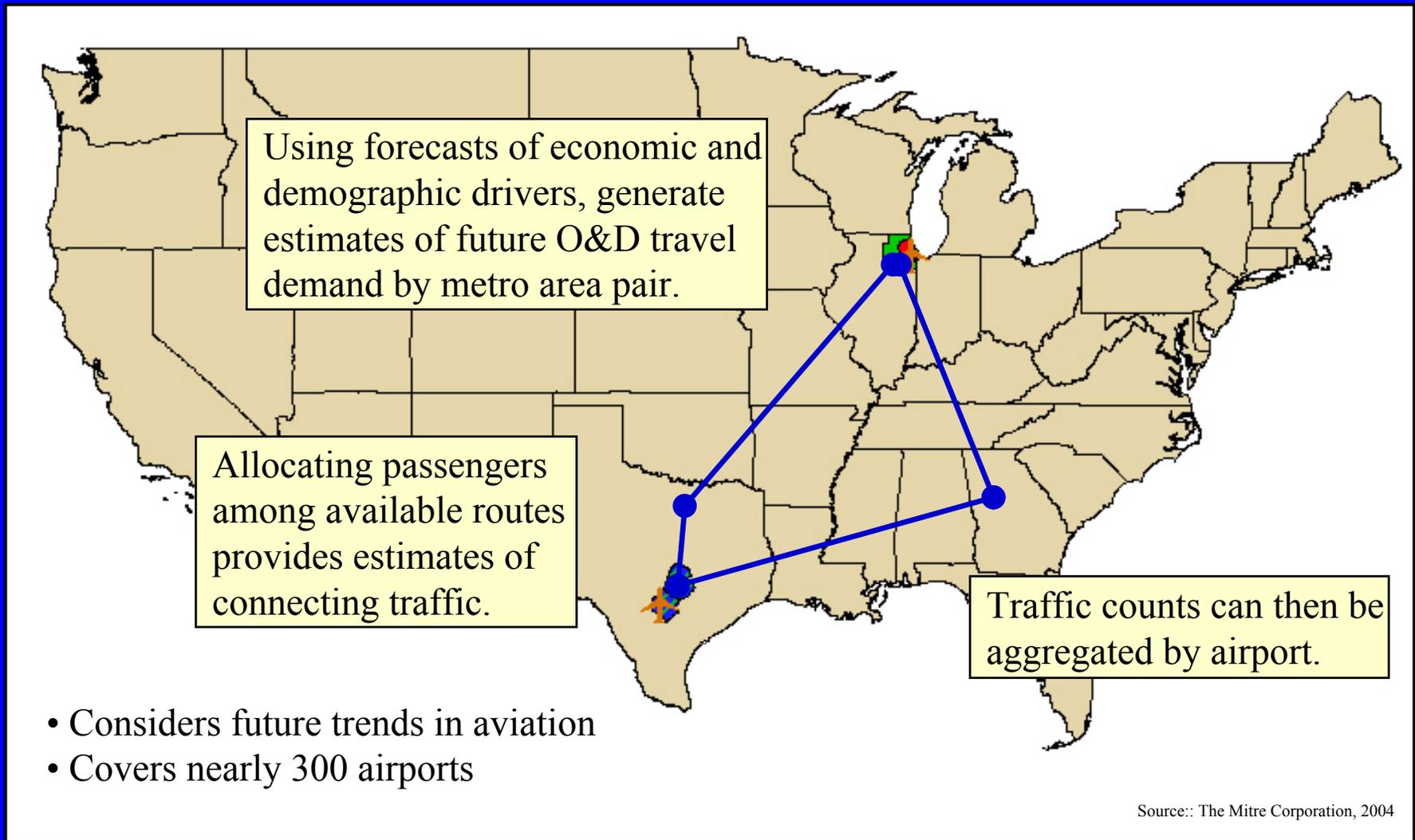
# Incorporating Socioeconomic Information



1. Metro areas with projected population growth of at least 1% per year and 150,000 from 2000 to 2020.
2. Metro areas with projected real income growth of at least 1% per year and \$50 billion from 2000 to 2020.
3. Aircraft indicate large and medium hub airports where low fare carriers have at least 15% market share.

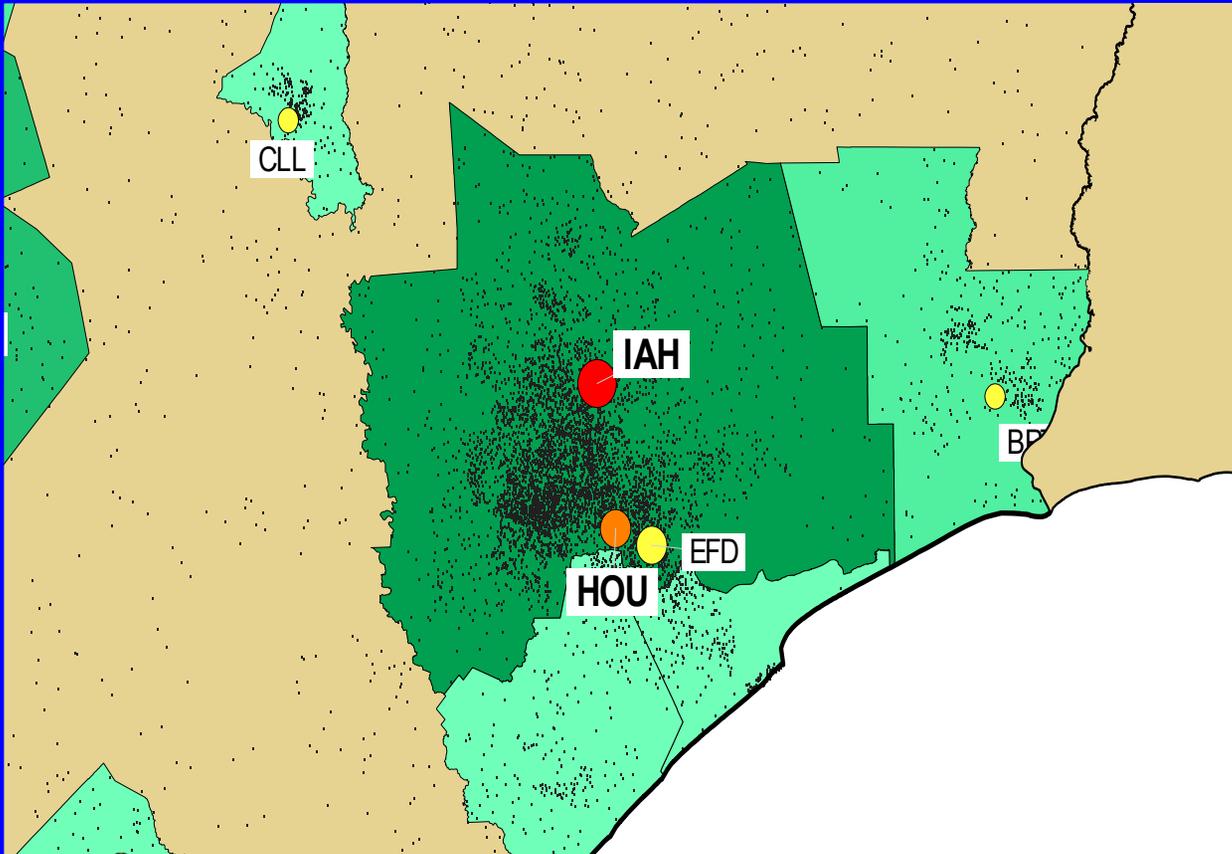


# Estimating Future O&D Traffic Flows





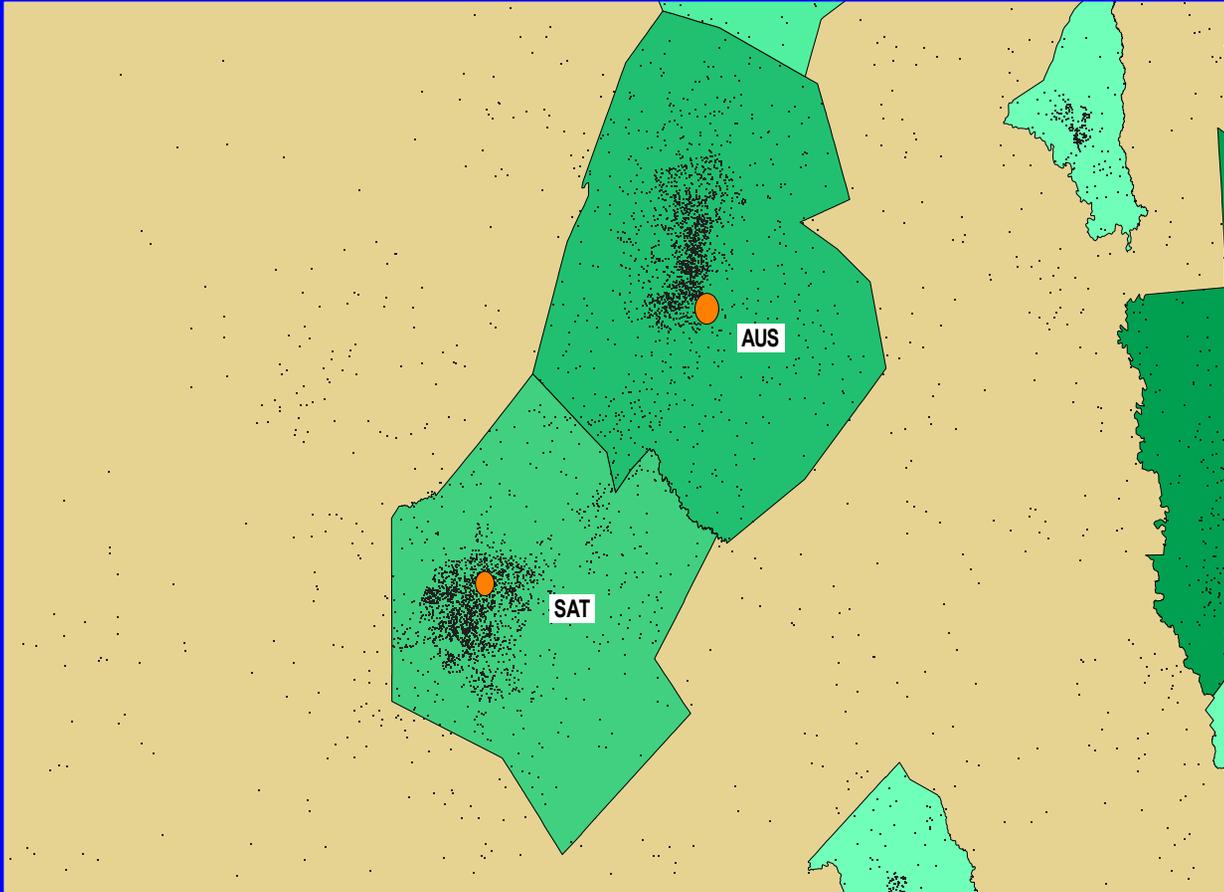
# Houston Metropolitan Area



- Examined more closely select metropolitan areas
  - Containing airports that are predicted to have high demand compared to available capacity
- Analyzed total demand and capacity for the metropolitan areas
  - Flagged those areas expected to have a demand/capacity ratio of .80 or greater



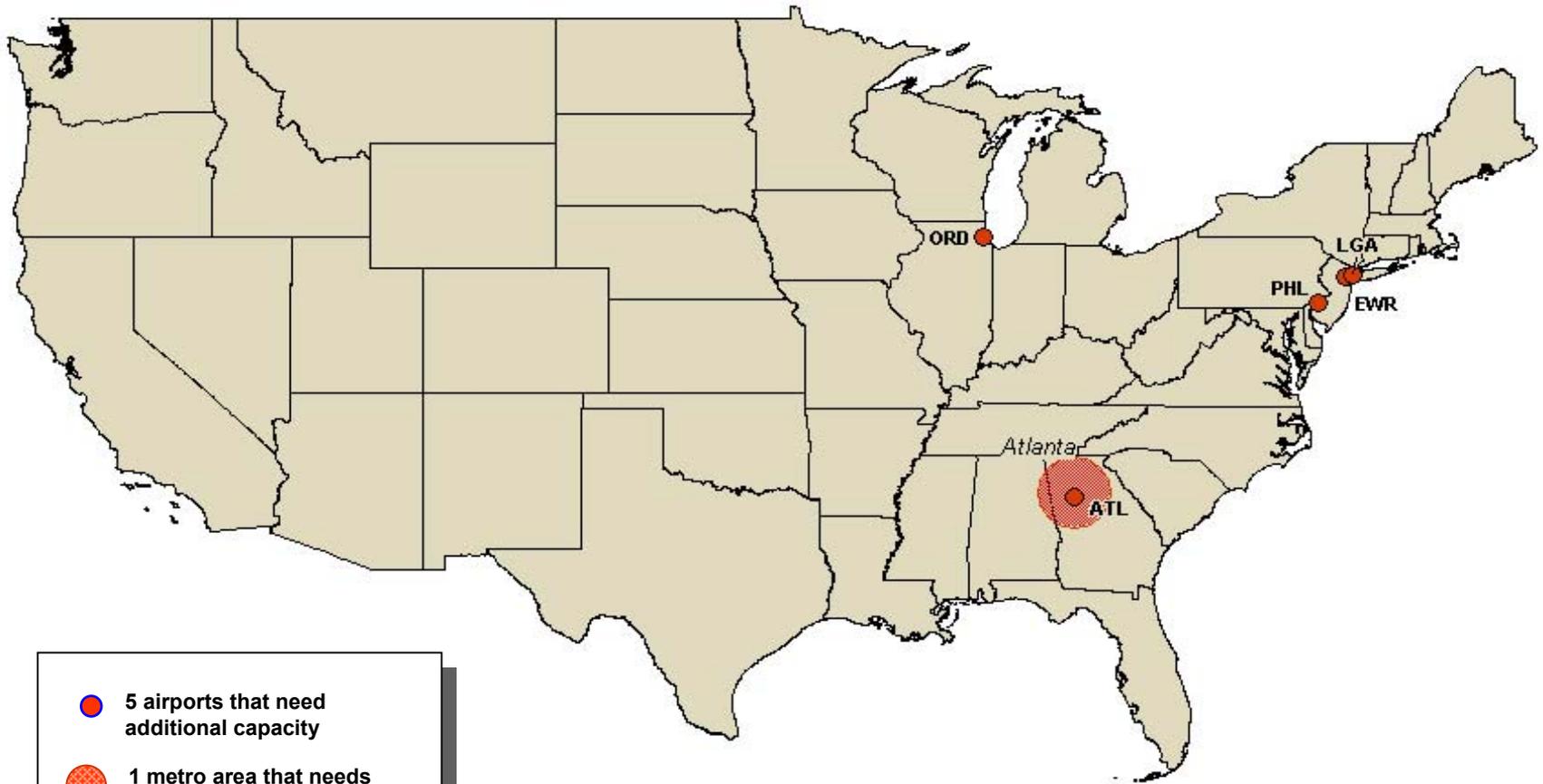
# Austin – San Antonio Metropolitan Area



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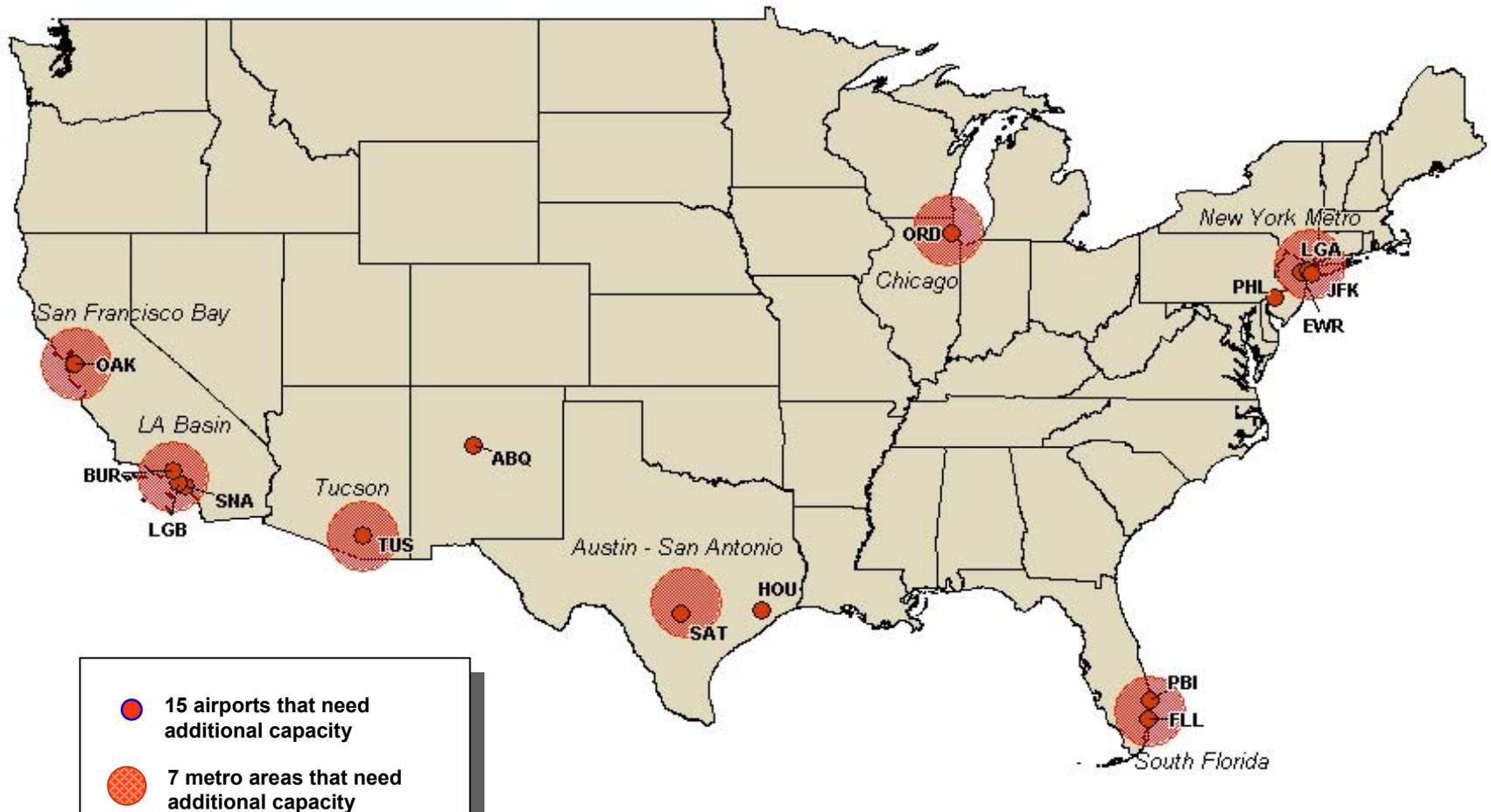
# 2003 Airports and Metro Areas That Need Additional Capacity



- 5 airports that need additional capacity
- 1 metro area that needs additional capacity

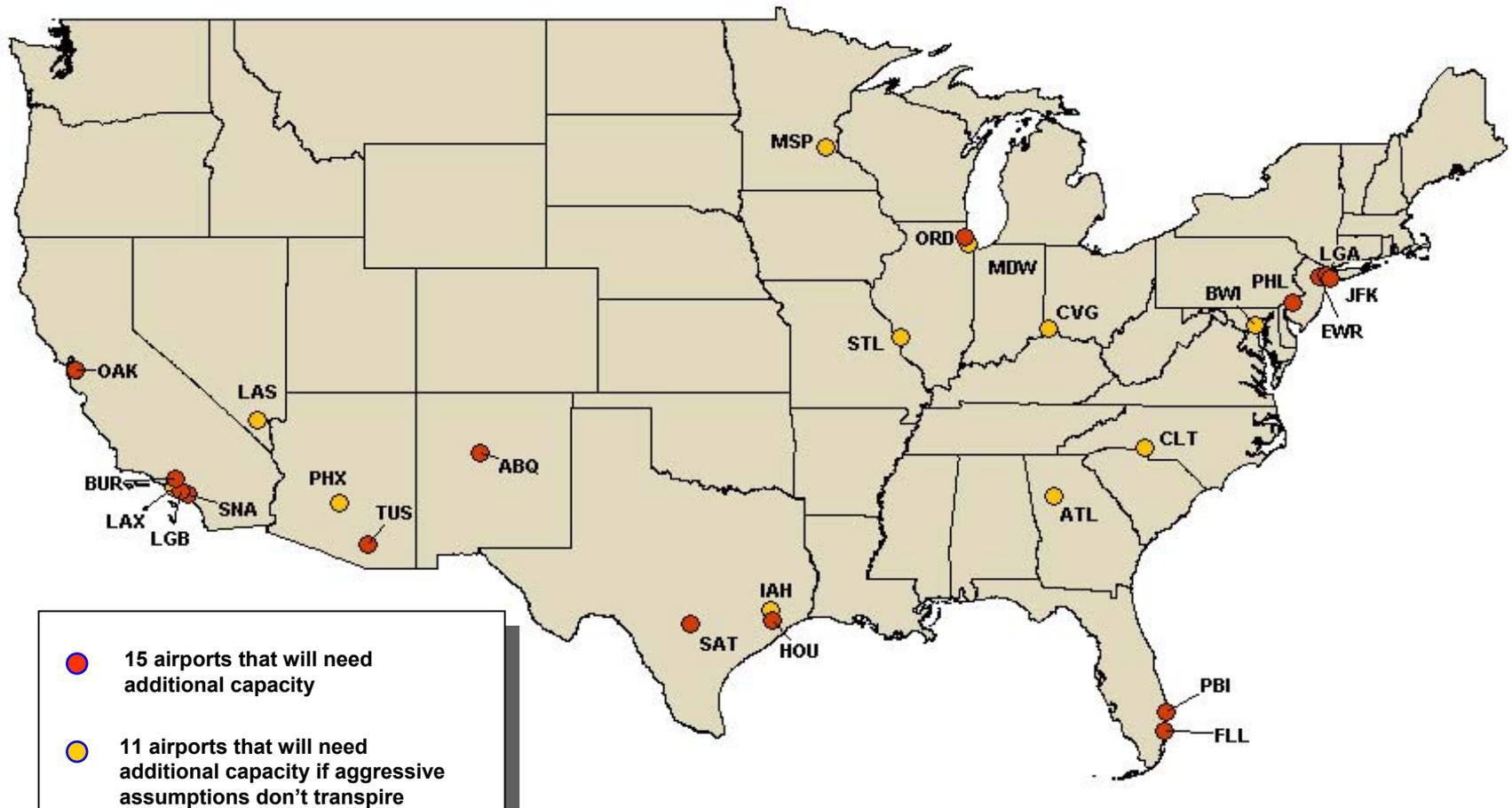


# 2013 Airports and Metro Areas That Need Additional Capacity



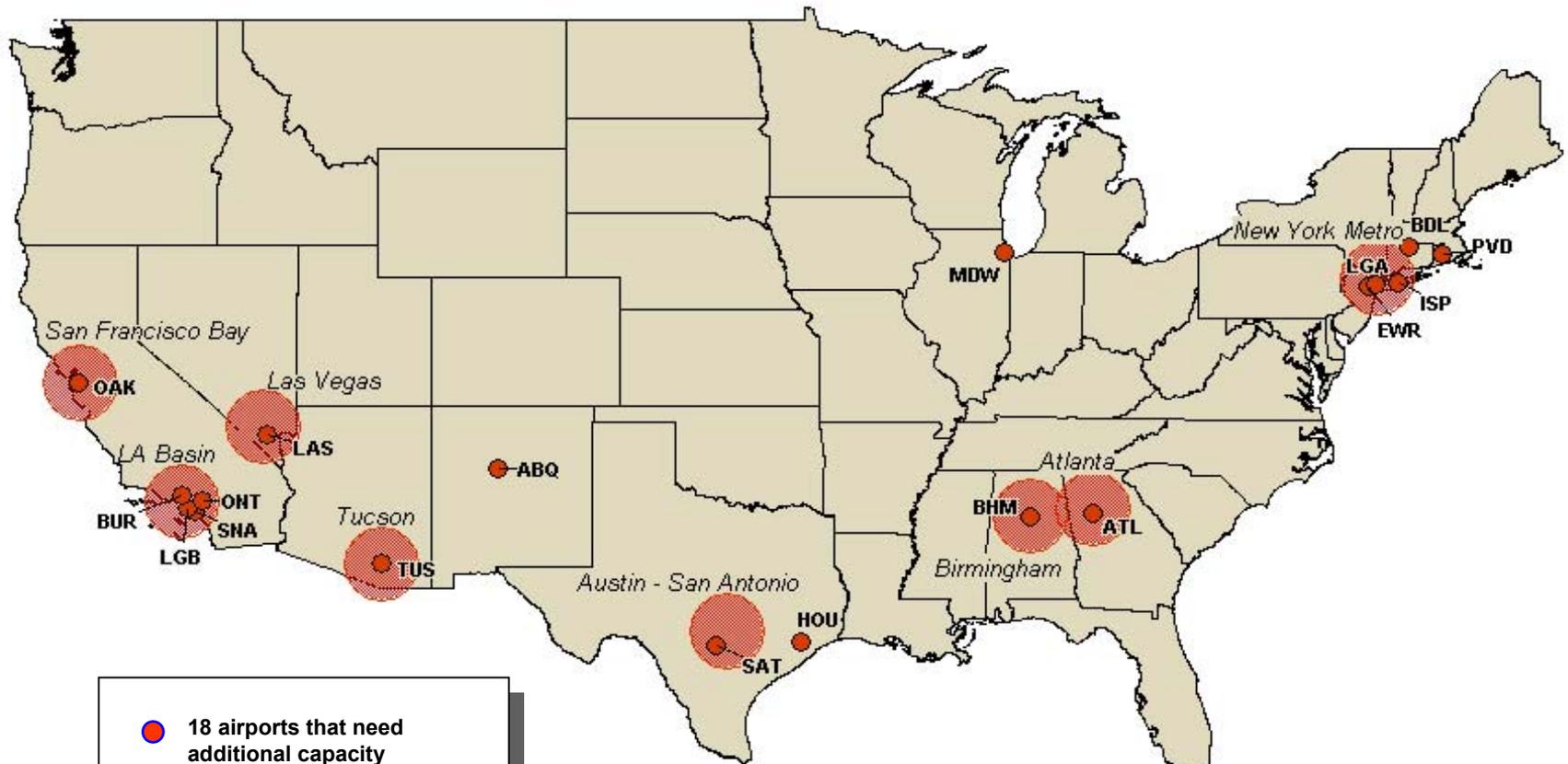


# 2013: Airports That Will Need Additional Capacity (Without Planned Improvements)





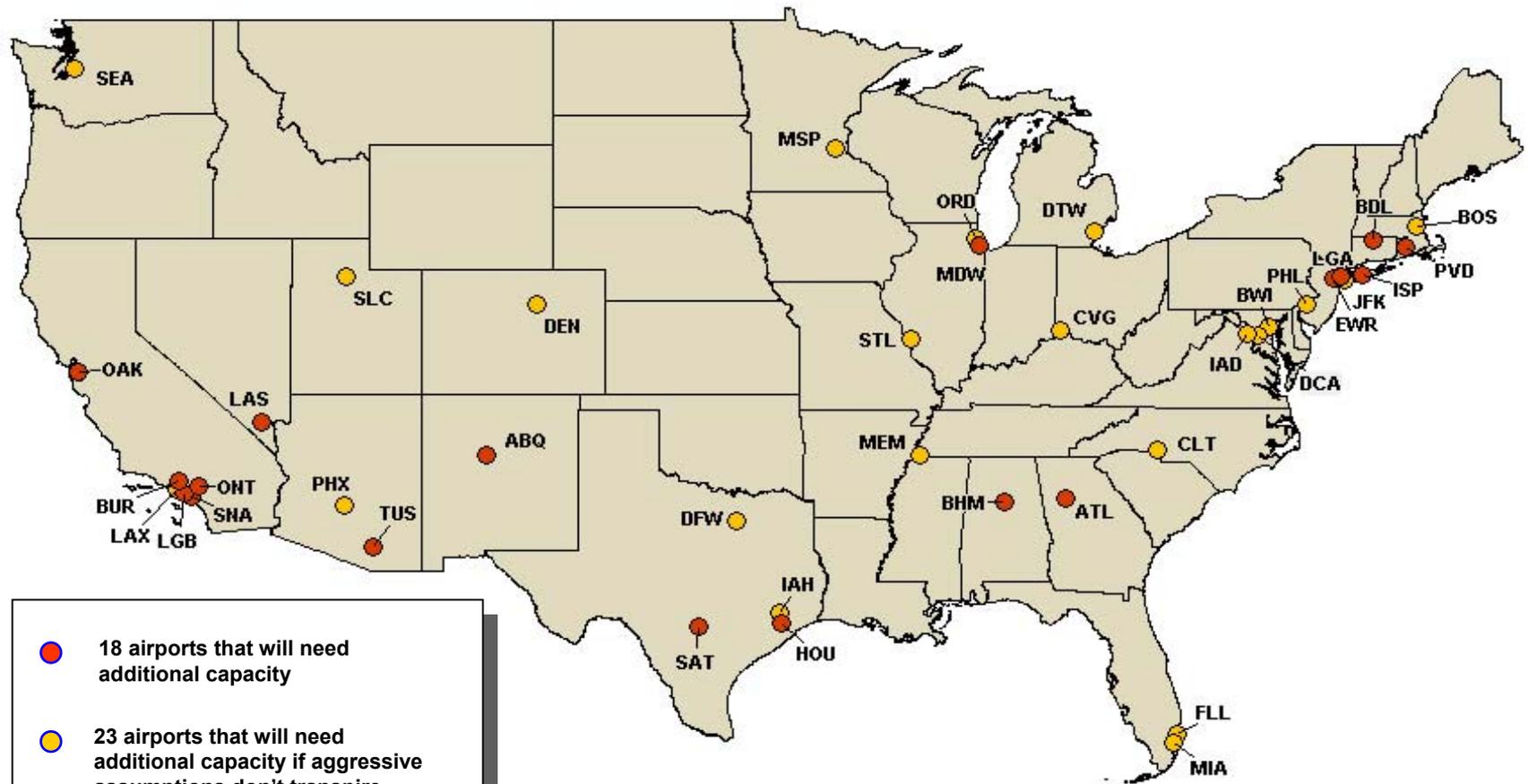
# 2020 Airports and Metro Areas That Need Additional Capacity



- 18 airports that need additional capacity
- 8 metro areas that need additional capacity



# 2020: Airports That Will Need Additional Capacity (Without Planned Improvements)



- 18 airports that will need additional capacity
- 23 airports that will need additional capacity if aggressive assumptions don't transpire



# Conclusions

- ) **Current improvement plans must move forward to keep up with demand by 2013**
  - Even the planned improvements will not be sufficient at some locations
- ) **Even with assumed improvements in 2020, capacity will not be sufficient at some locations**
- ) **Additional analyses are necessary to develop possible solutions for the identified airports**
  - Additional analyses will be necessary for the non-OEP airports to gain a better understanding of their capabilities, operations and local regulations
  - Detailed feedback and information obtained from the airports will be incorporated
  - In addition to new runways, procedures and technologies, policy options should also be explored



# Next Steps

## ) **Improve analysis capabilities at non-OEP airports**

- Detailed benchmarks for these airports
- Develop ASVs for all non-OEP airports

## ) **Peer review**

- Coordination with industry, regions and airport authorities
- Feedback incorporated into future versions

## ) **Other assessments**

- Further review due to model limitations



# Next Steps (continued)

## ) **Identify possible solutions**

- Address regulatory constraints as well as policy decisions
- Target federal investment to areas of greatest national priority

## ) **Solutions Toolbox**

- Innovative Runway Use - Converging, diverging, parallels
- Local Policy - Curfews, use restrictions, demand management
- New Technology- CEF, CCTV, ASDE
- Taxiway Design - Perimeter, high speed, holding pads

## ) **Output**

- Expand OEP
- Determine schedule to update analysis



# Future Concepts: Technology and Procedures

•Extrapolated from Full OEP targets, other future concepts

		2003	Full OEP (2013)	2020
CEFR	Visual arrival separations	VMC	MMC	2.0 nmi in IMC
Wake Vortex procedures	In-trail separation	4/5/6 nmi		3/4/5 nmi
	Arrivals to close parallels: 1.5 nmi stagger	>= 2500 ft spacing	Behind Small/Large 1000-2500 ft	Behind Small/Large 700-2500 ft
	Departures from close parallels: behind 757/H	2 min <2500 ft spacing	60 sec 700-2500 ft (with crosswind)	
RNAV and TMA	Delivery accuracy at threshold (1 sigma)	18 sec	12 sec (selected airports)	12 sec (all airports)
SOIA RPAT PRM Multilateration	Paired approaches (750-2500 ft spacing)	STL only	Selected airports MMC	Widely implemented MMC/IMC
	Simultaneous closely spaced approaches (MMC/IMC)	PRM sites >=3000 ft spacing		Widely implemented >= 2500 ft spacing
Intersecting Runway Procedures	Simultaneous converging (SCIA)	Dual approaches > 700/2		Triple approaches IMC
	Dependent converging (DCIA)	IMC		Reduced separation at intersection



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