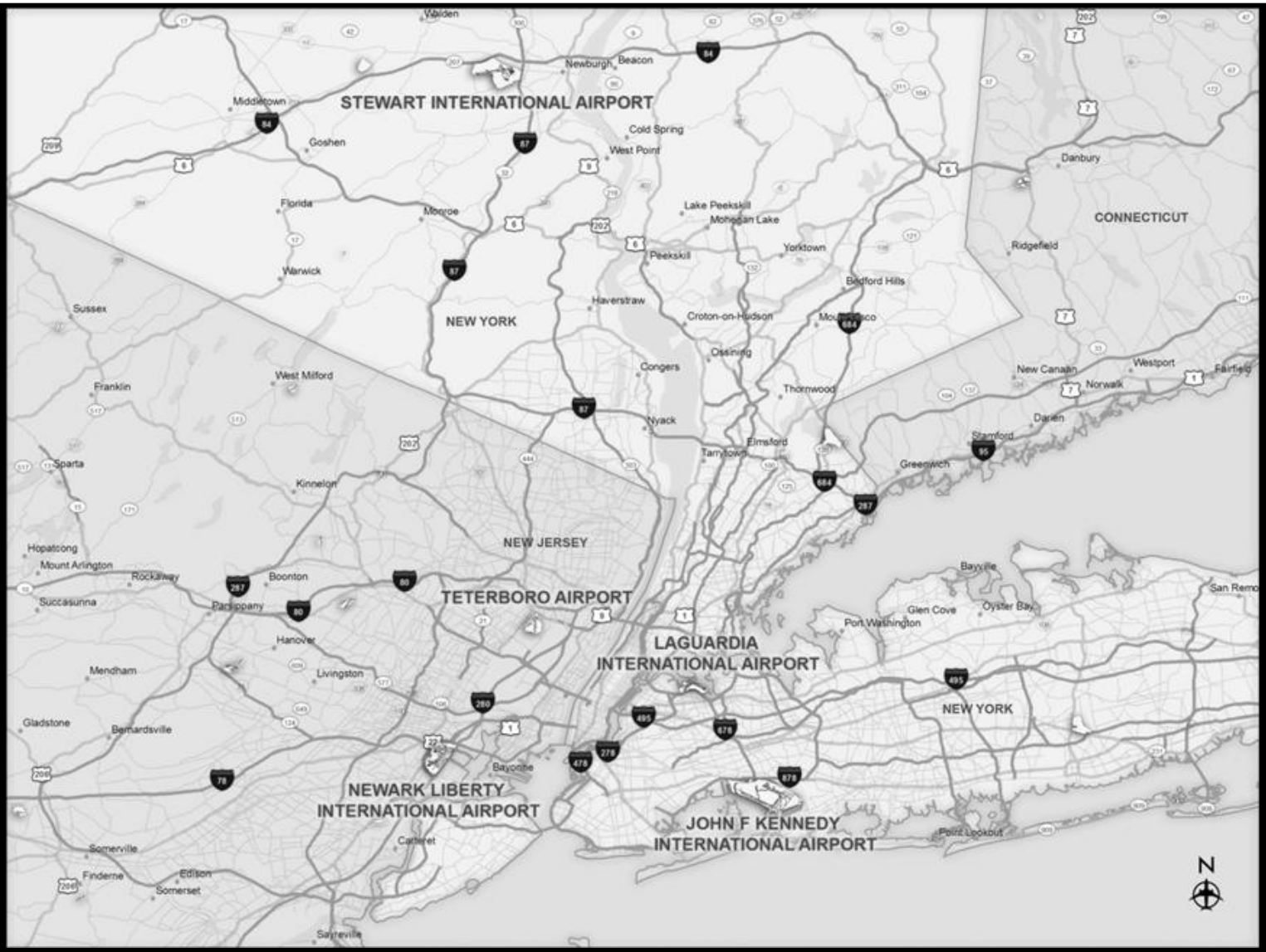
Taking the NY Airports into the 21st Century:

Port Authority Airport System Capacity Planning Study

TRB National Aviation System Planning Symposium

May 21, 2012

Background: 2 States, 5 Airports, 108M Passengers



Part I:
The Problem
(…How much time do we have?)

We're Number One!

Average Aircraft Delays:

LGA	EWR	JFK
		

Some Caps are Better than Others

Good Caps

Bad Caps

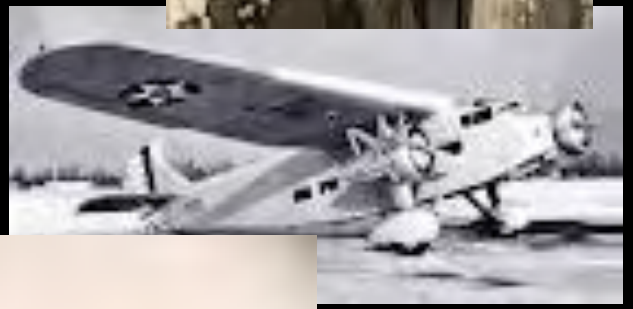
EWR: 81 ops/hr

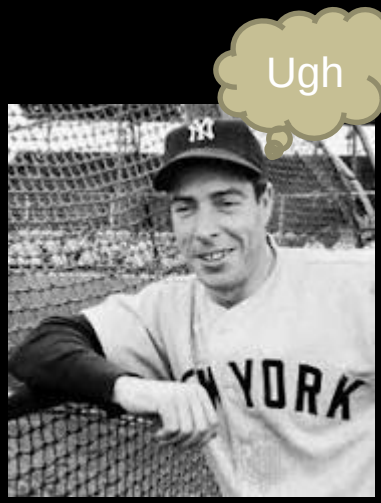
JFK: 81 ops/hr

LGA: 71 ops/hr (+ 3 GA)

Older Facilities

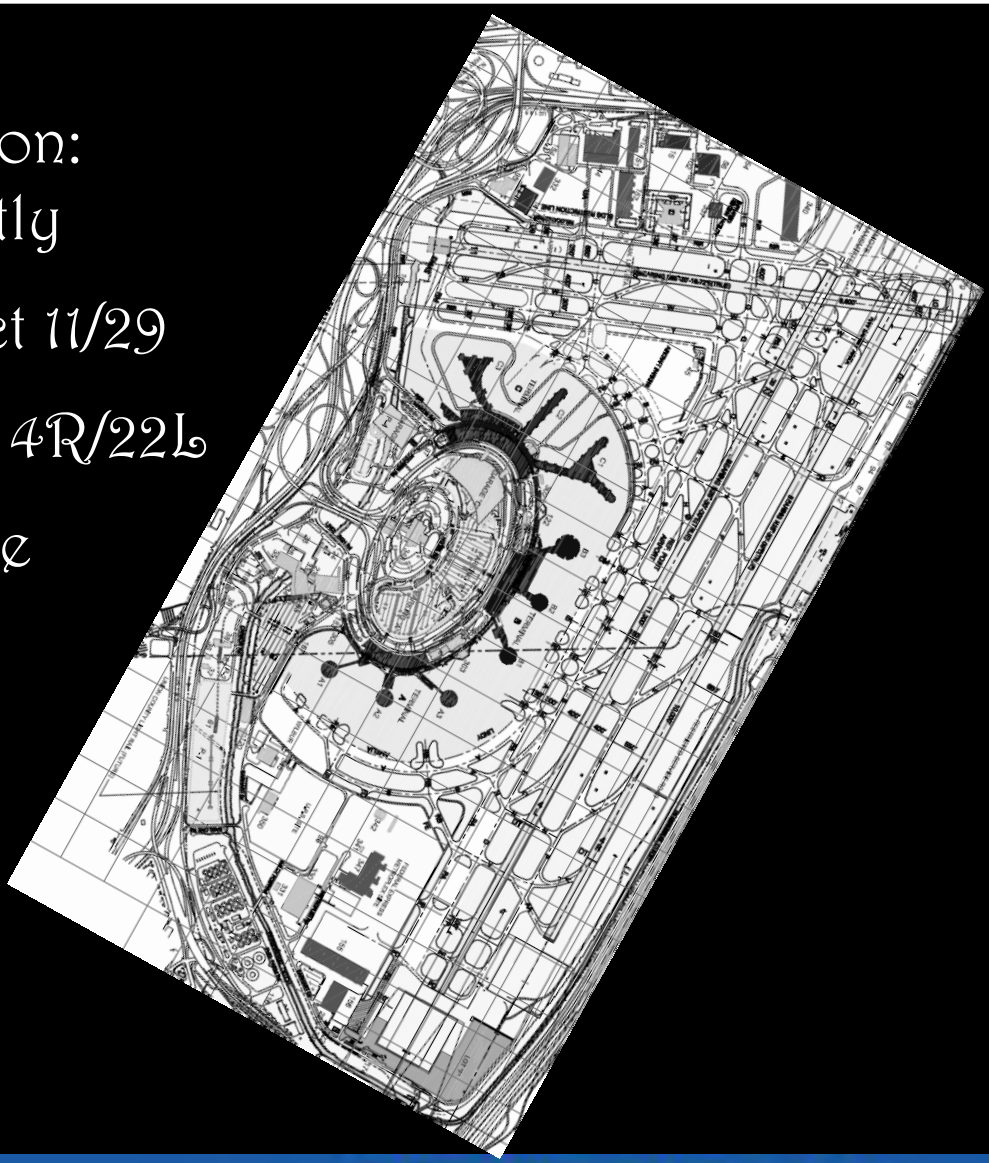
- EWR opened 1928; LGA, 1939; JFK, 1948
- Last new runway built in 1970s
- Little or no space to expand on-airport
- In dense urban region





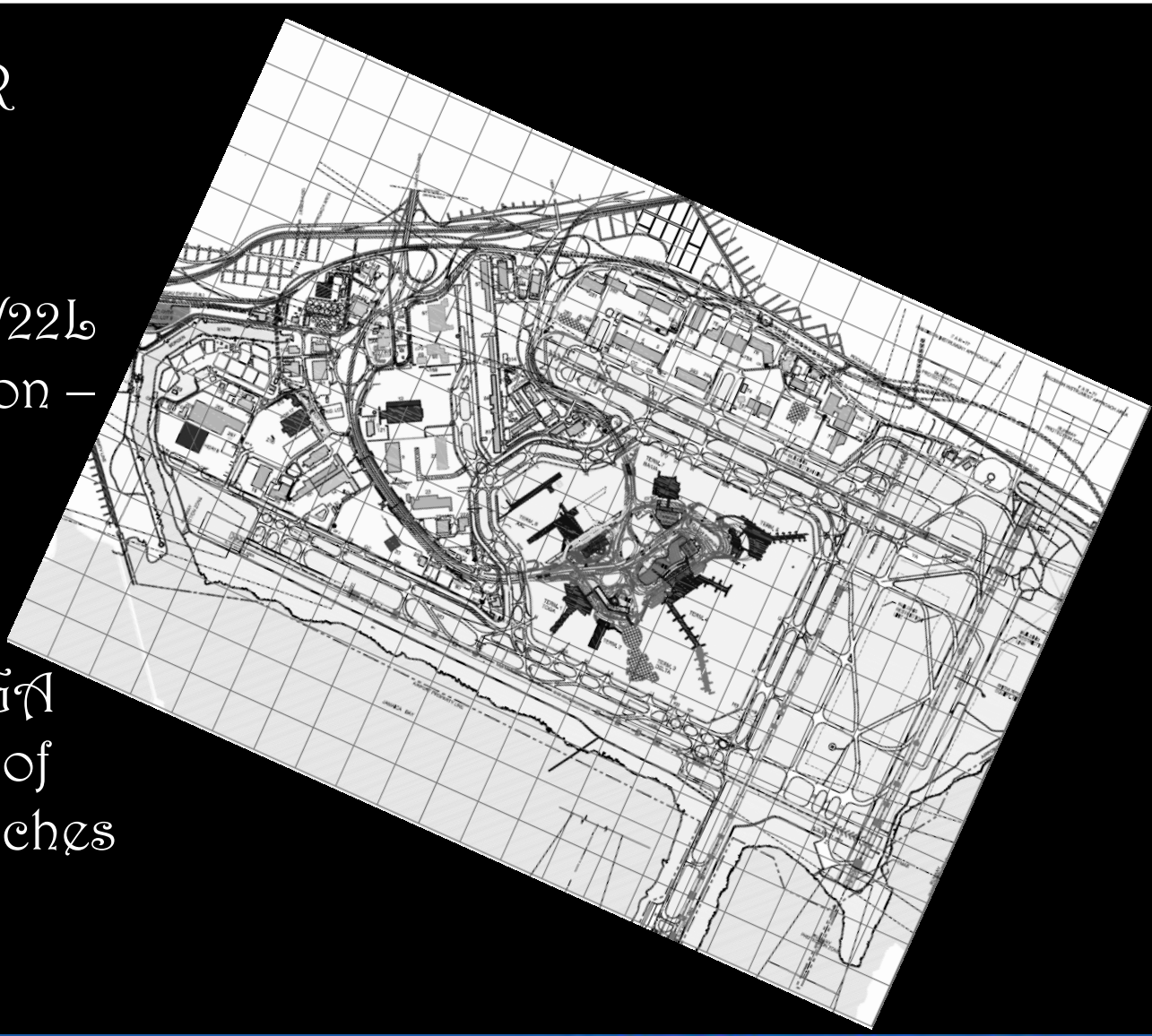
Airside Constraints: EWR

- Main runways 950' separation: cannot operate independently
- Both main runways intersect 11/29
- Must cross 4L/22R to get to 4R/22L
- 11/29 short (6,800'), limits use
- Flows affected by TEB



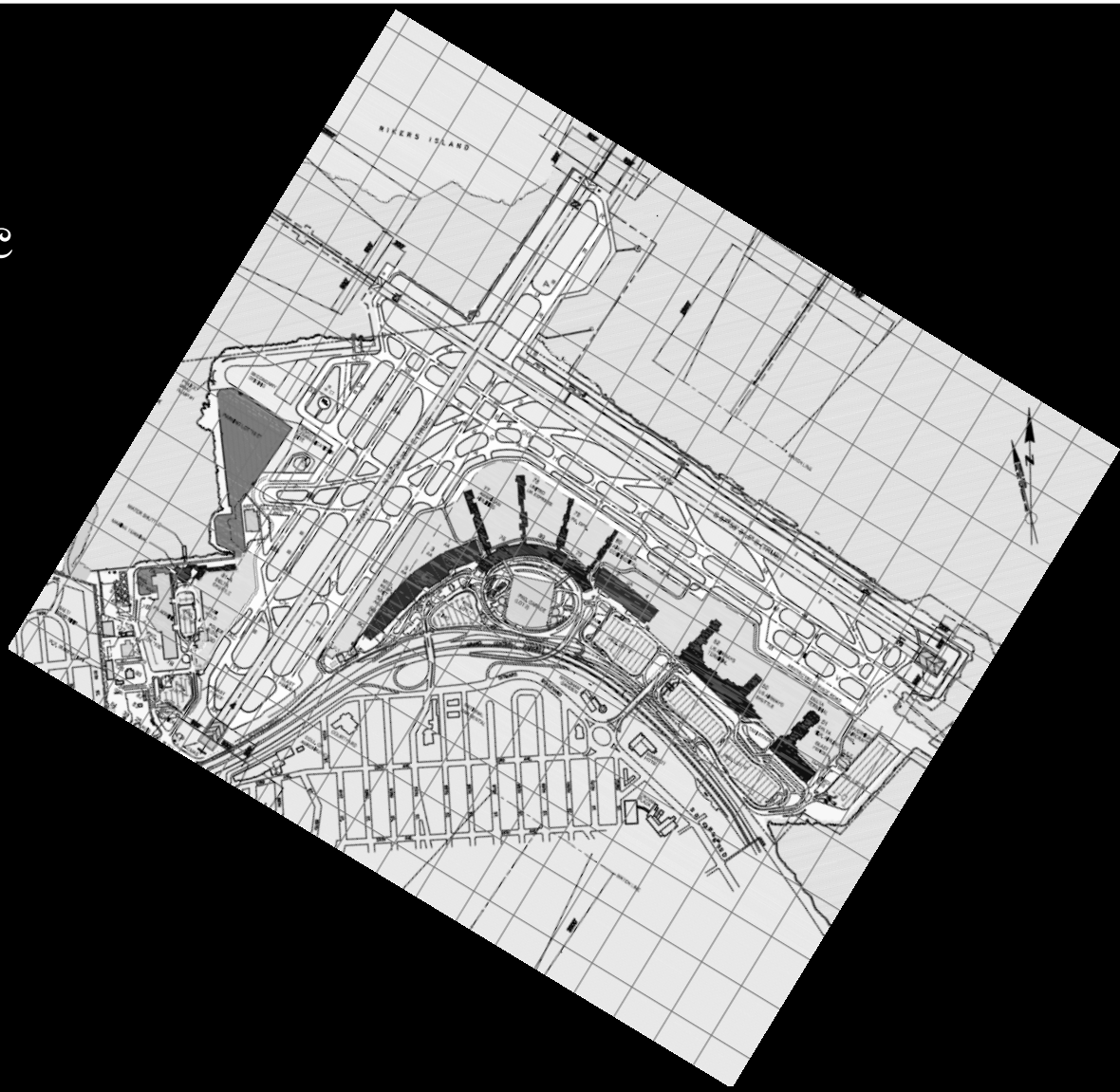
Airside Constraints: JFK

- Runway 4L/22R intersects both 13/31s
- 4L/22R and 4R/22L 3,000' separation – too close for independent parallel ops
- Proximity to LGA constrains use of runway approaches

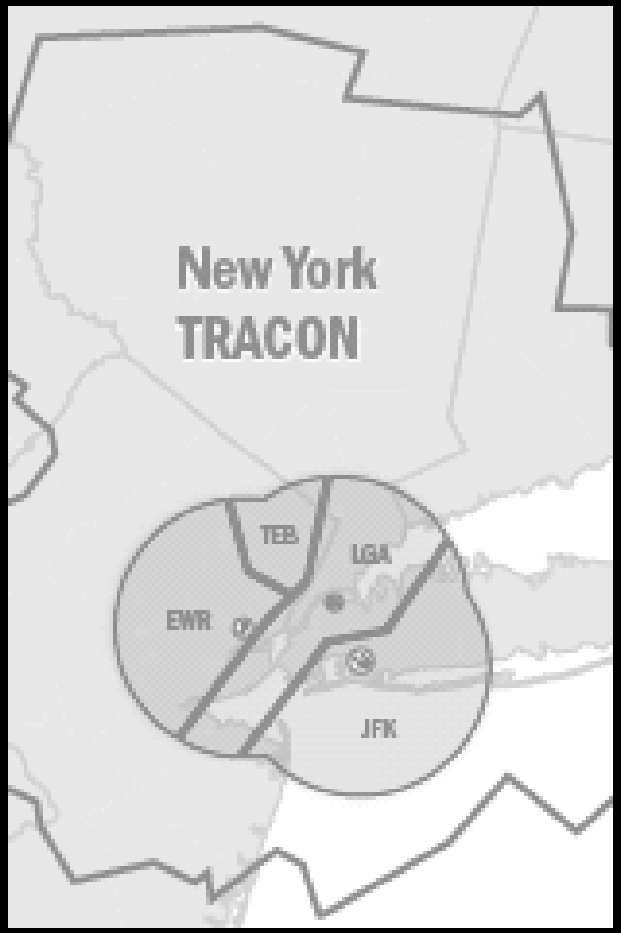


Airside Constraints: LGA

- Short (7,000') runways, limits LGA to Class IV a/c
- Intersecting runways, no parallels
- Limited space for aircraft departure queues
- Airspace conflicts with JFK and TEB

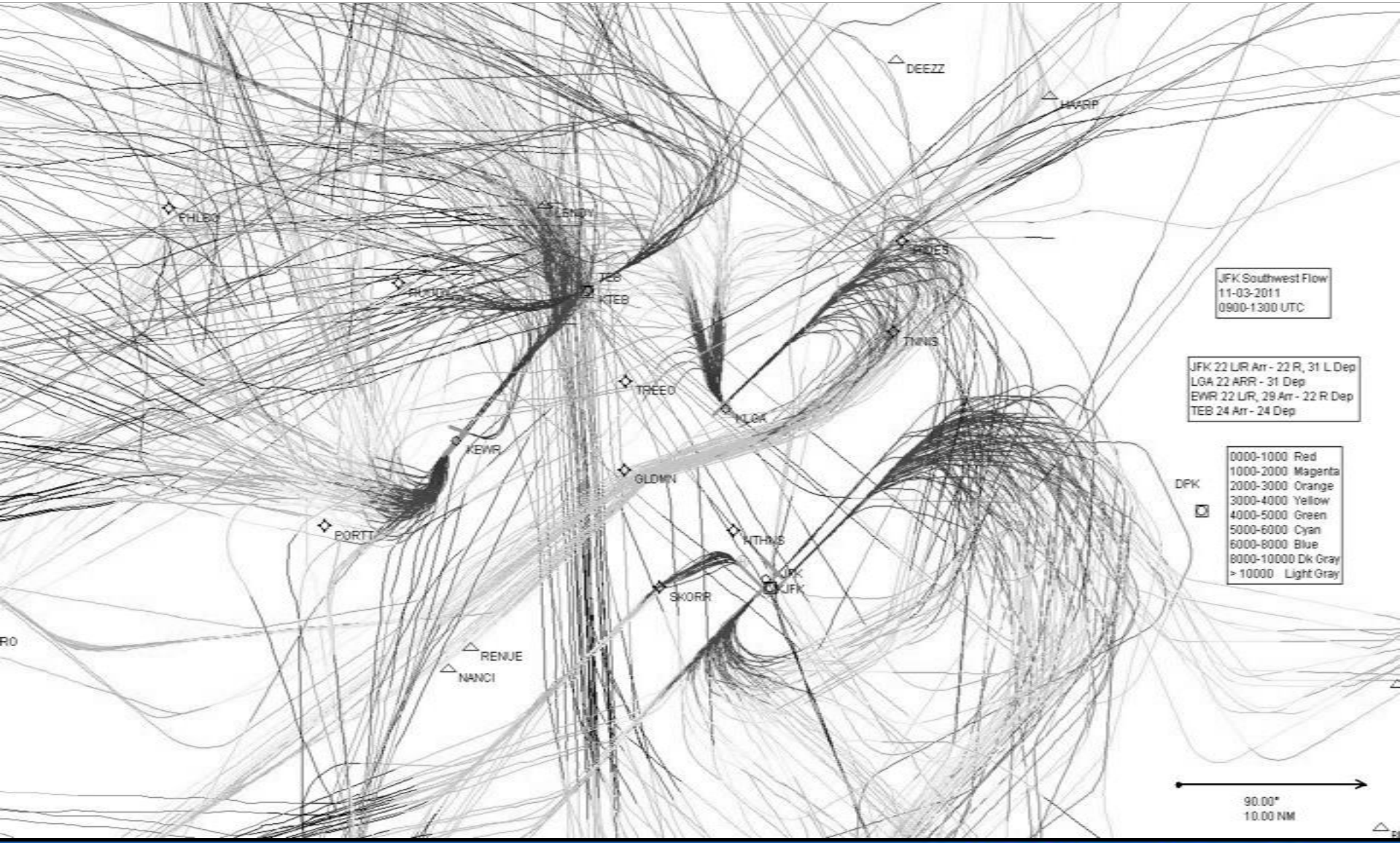


Airspace Constraints



- Airports close! JFK-LGA, 9 miles; TEB-EWR, 11 miles
- JFK –LGA proximity: constrains flows at both airports
- EWR-TEB proximity: constrains flows at both airports
- EWR- LGA airspace conflicts
- LGA-TEB airspace conflicts

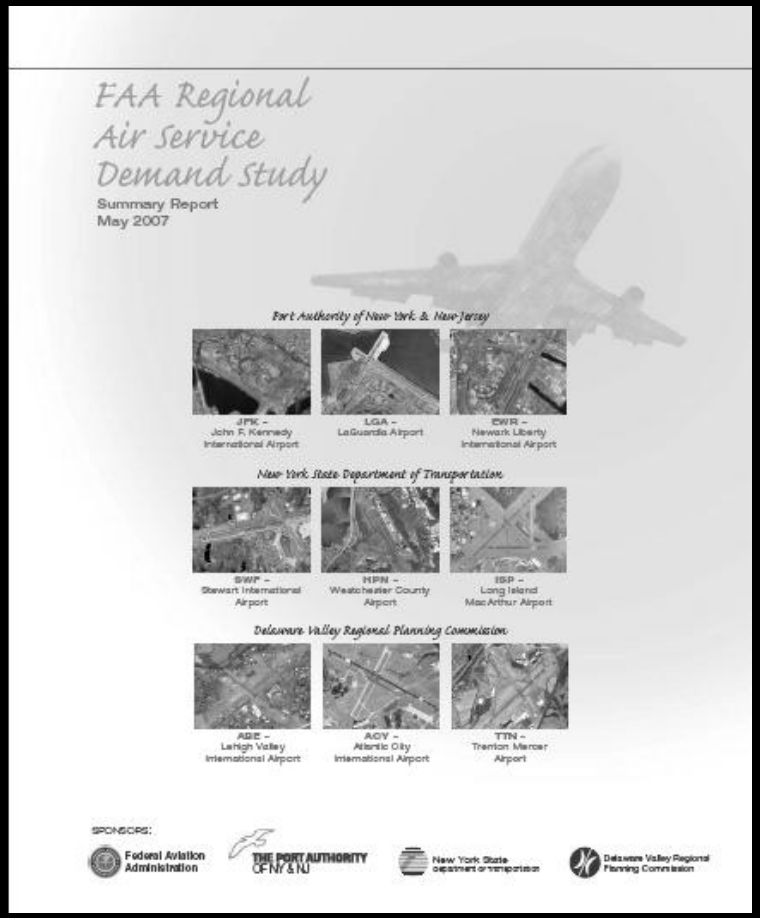
Airspace Constraints



Looking to the Future…

Prior studies conclude:

- Substantial growth in air travel in region
- Additional runway capacity needed to serve demand
- Airspace capacity key to fully using airside capabilities



…What's a bi-state agency to do?

Part II:
The Study

Overall Purpose

- Identify and Evaluate Alternatives for Meeting Future Aviation Demand in the New York Region

Overall Scope of Work

- Review Existing System Characteristics and Constraints
- Perform Analysis to Identify Potential Future Capacity Requirements and Constraints
- Identify and Evaluate Potential Alternatives to Meet Agency Goals and Objectives…
- Assess Alternatives in Terms of Practicality, Operational, and Economic Feasibility

Port Authority Overall Vision

- Support the Region's growing service-based economy by building an airport system that accommodates existing and future demand more efficiently and effectively

- Create a modern, efficient airport transport system that serves business and leisure travelers connecting our Region with existing and emerging world cities and business centers

- Provide the air cargo industry with reliable, fast and affordable ways to deliver their goods by air to the region and to other destinations worldwide

- Upgrade the airport system infrastructure to state-of-the-art standards of service, safety, and technological innovation and to bring about and sustain seamless airport travel for generations of air travelers

Port Authority Specific Goals

- Identify and Address the Long-Term Aviation Needs of the Greater New York/New Jersey Metropolitan Area
- Identify and Address Long-Term Needs for Terminal, Landside, and Support Facilities, and Other Infrastructure
- Identify Development Alternatives That Can Be Feasibly Implemented

Forecast Aviation Demand: Passengers

PASSENGER FORECAST SUMMARY

PASSENGERS (000'S)

JFK + LGA + EWR + SWF

	Year	Kennedy	LaGuardia	Newark	Stewart	Total
History	1980	25,993	17,421	9,223	-	52,637
	2000	32,827	25,360	34,188	-	92,375
	2010	46,514	23,983	33,120	395	104,012
Est	2011	48,000	25,000	33,000	400	106,400
	2012	48,000	25,000	34,000	500	107,500
Forecast	2017	55,000	27,000	38,000	800	120,800
	2020	58,000	28,000	41,000	1,100	128,100
	2022	61,000	29,000	43,000	1,200	134,200
	2027	68,000	33,000	50,000	1,700	152,700
	2030	72,000	35,000	54,000	2,000	163,000
	2031	74,000	35,000	55,000	2,100	166,100
	2032	75,000	36,000	57,000	2,200	170,200
	2012- 2032	**2.3%**	**1.8%**	**2.6%**	**7.7%**	**2.3%**

Source: Port Authority of New York & New Jersey

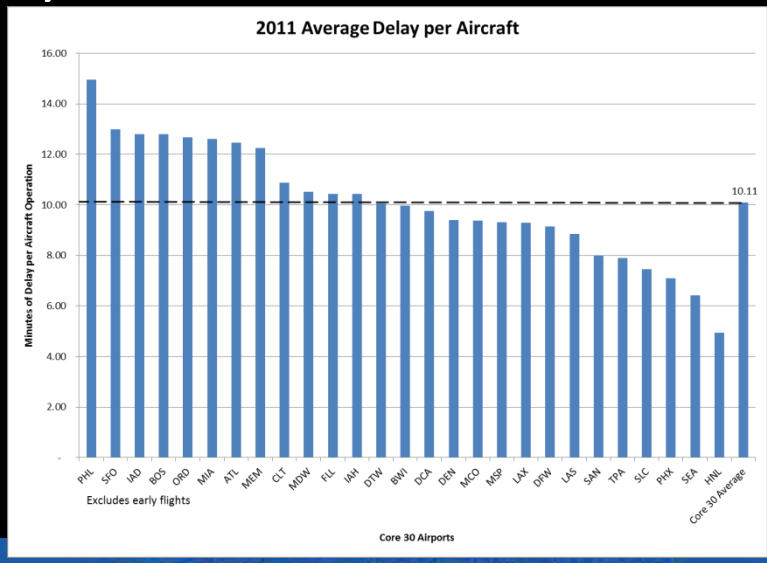
Forecast Aviation Demand: Operations

	AIRCRAFT OPERATIONS FORECAST SUMMARY JFK + LGA + EWR + SWF + TEB						
	Year	Kennedy	LaGuard	Newark	Stewart	Teterbor	Total
History	1980	296,771	316,557	196,779			810,107
	2000	345,311	384,555	450,289	9,221	270,301	1,459,677
	2010	397,635	361,616	403,339	47,032	157,076	1,366,698
Est	2011	410,000	373,000	409,000	47,000	151,000	1,390,000
	2012	420,000	376,000	419,000	48,000	148,000	1,411,000
Forecast	2017	462,000	395,000	449,000	55,000	158,000	1,519,000
	2020	487,000	410,000	472,000	60,000	163,000	1,592,000
	2022	503,000	421,000	488,000	62,000	170,000	1,644,000
	2027	548,000	457,000	535,000	69,000	196,000	1,805,000
	2030	576,000	478,000	566,000	74,000	209,000	1,903,000
	2031	586,000	484,000	576,000	76,000	213,000	1,935,000
	2032	595,000	490,000	586,000	77,000	215,000	1,963,000
	2012- 2032	**1.8%**	**1.3%**	**1.7%**	**2.4%**	**1.9%**	**1.7%**

Source: Port Authority of New York & New Jersey

Capacity & Delay Analysis/Future Requirements

- Analyze future aviation demand versus capacity
- Develop “No Action” scenario
- Consider impact of NextGen on airside capacity
- Identify future airfield/airspace capacity deficiencies (airside gap analysis)
- Identify future terminal and landside capacity constraints (landside gap analysis)



Airside Gap Analysis: Future Delays

EWR Annual Average Delay per Aircraft	
	Model
Arr.	126.1
Dep.	221.9
Avg.	174.0

LGA Annual Average Delay per Aircraft	
	Model
Arr.	123.1
Dep.	133.1
Avg.	128.1

JFK Annual Average Delay per Aircraft	
	Model
Arr.	126.6
Dep.	200.0
Avg.	163.3

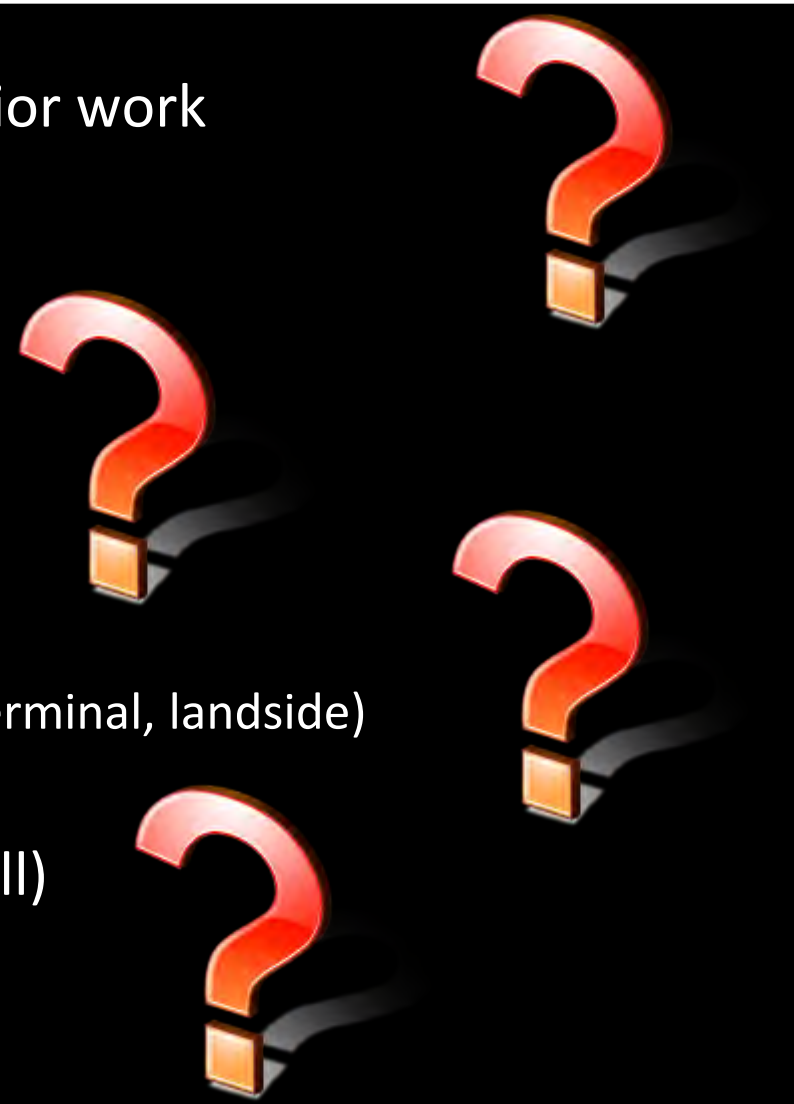
Preliminary findings: additional runways needed to meet unconstrained demand

Non-Runway Alternatives

- Other airports: existing site, new airport
- Other modes: trains, buses, autos
- Demand management: pricing, caps, aircraft size

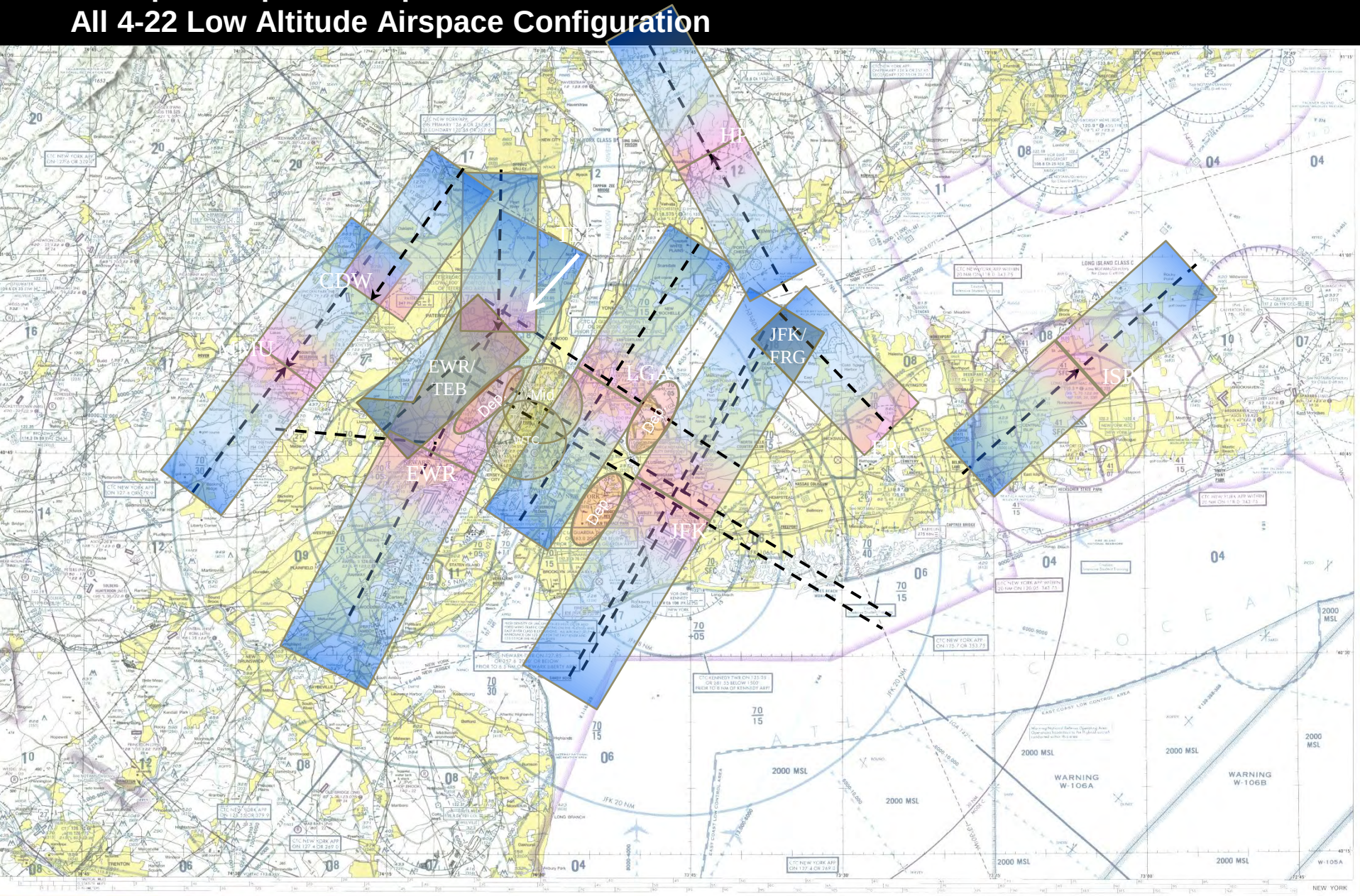
Runway Development Alternatives

- Review alternatives identified in prior work
- Identify additional alternatives
- Define alternatives
  - Airspace structure requirements
  - Engineering features
  - Enabling actions (displaced facilities, terminal, landside)
- And the alternatives are… (drum roll)



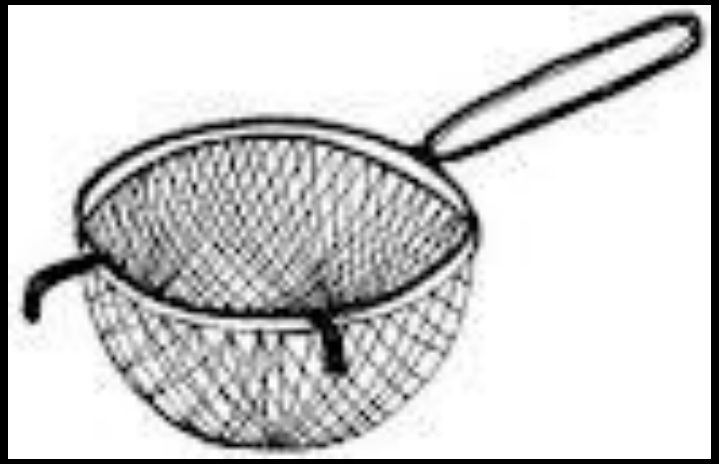
Just Kidding…

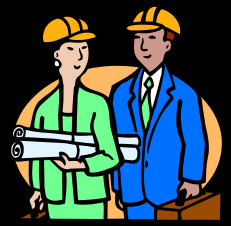
Example Airspace Template
All 4-22 Low Altitude Airspace Configuration



Runway Alternatives Refinement and Evaluation

- Airspace requirements
- Construction costs
- Constructability and Impact on Existing Operations
- Environmental Feasibility
- Capacity and Delay Reduction



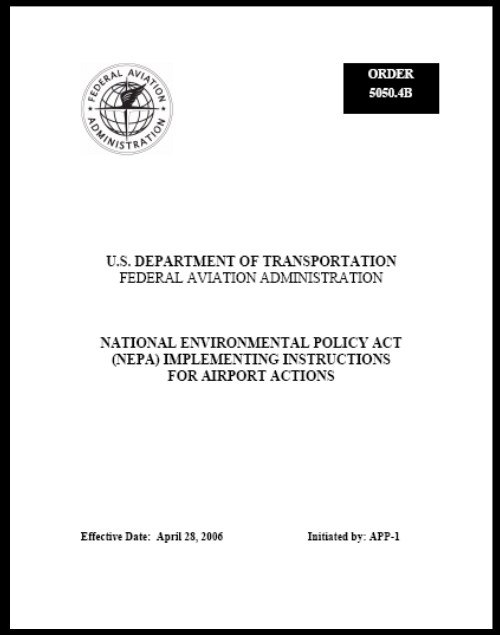


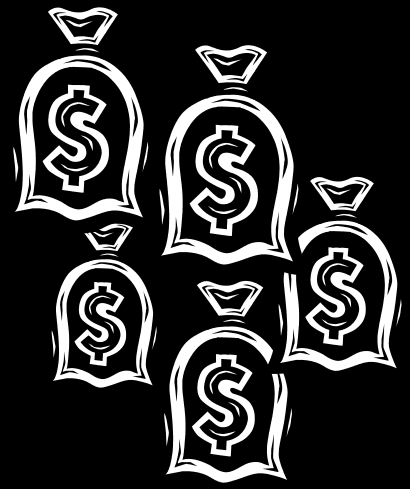
FAA Involvement

- Meeting Participation
- Document Review
- Forecast Review/Approval
- Assist with Data Collection (i.e. TARGETS, PDARS, etc.)
- Airspace, Approach/Departure Procedural Changes
- Assist in Development of Alternatives Analysis

Next Steps


report


ORDER
5050.4B
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
NATIONAL ENVIRONMENTAL POLICY ACT
(NEPA) IMPLEMENTING INSTRUCTIONS
FOR AIRPORT ACTIONS
Effective Date: April 28, 2006
Initiated by: APP-1



Thank you!

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