

# Ceiling & Visibility Efficiency and Delay Issues for Air Carriers



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# Study: Flight Delays Cost Passengers \$16.7 Billion

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Airline flight delays cost passengers more than inconvenience — \$16.7 billion more — according to a study delivered to the Federal Aviation Administration on Monday.

The FAA-funded study looks at the cost to passengers for flight delays in 2007, the latest year for which complete data was available when researchers began working on the study.

Unlike past studies of the impact of flight delays, researchers looked more broadly at the costs associated with flight delays, including passengers' lost time waiting for flights and then scrambling to make other arrangements when flights are canceled.

The cost to airlines for delays was \$8.3 billion, mostly for crew, fuel and maintenance. Overall, the cost was \$33 billion, including to other parts of the economy. But one finding of the study is that more than half the cost associated with flight delays is borne by passengers.

Those costs likely were lower in the three years since 2007, due to the weakened economy. Air travel peaked in 2007 before the economy went sour. And so did flight delays and cancellations. In 2007, 1.3 million domestic flights were delayed and 119,000 flights canceled, according to the Bureau of Transportation Statistics.

Last year, 85,000 flights were delayed and 63,000 canceled. Mark Hansen, a civil and environmental engineering professor at the University of California, Berkeley, who led the study, said he believes 2007 is a more representative year "since we think that the weak economy isn't a permanent thing."

# Impact of Delays to UPS

- 8 Afternoon Flights to EWR, JFK, BOS, BDL, PHL all turn back to our Next Day Air overnight Operation
- A single delay of 2 hours or more impacts our entire Next Day Air operation that night.
- A single delay of 4 hours or more jeopardizes Next Day Air service (up to 15,000 packages could miss service)
- To manage this risk, we pre-position aircraft in these airports at significant additional cost

# **Ceiling and Visibility Impact on Arrivals**

# EWR best Airport Arrival Rates

EWR

*NOTE - The rates depicted in this table are for estimating purposes only and do not necessarily reflect the current operational plan or current traffic balancing activities.*

AAR						
Arrival	Departure	VMC (2000/3)	LOW VMC	IMC	LOW IMC	Notes
22L	22L	38	35	32	29	
22R	22R	34	30	30	26	
22LJ11	22R	52	46			
22L CIR 29	29	38	36			
04R CIR 29	04R 09	34	34			
04R	04L	38	38	37	34	2.5NM FINAL RY4R
04R 11	04L	48	44			2.5NM FINAL/LAHSO
04R 04L	04L	46				
04R 29	04L	44	42			

Holding Capacities	
Center / Fix	Capacity
CAMRN	
LENDY	
ROBER	

Arrival Flows	
Centers	Fixes
CAMRN	
LENDY	
ROBER	

Category Minimums	
Category	RVR
I	
II	
IIIa	
IIIb	
IIIc	

# EWR best Airport Arrival Rates

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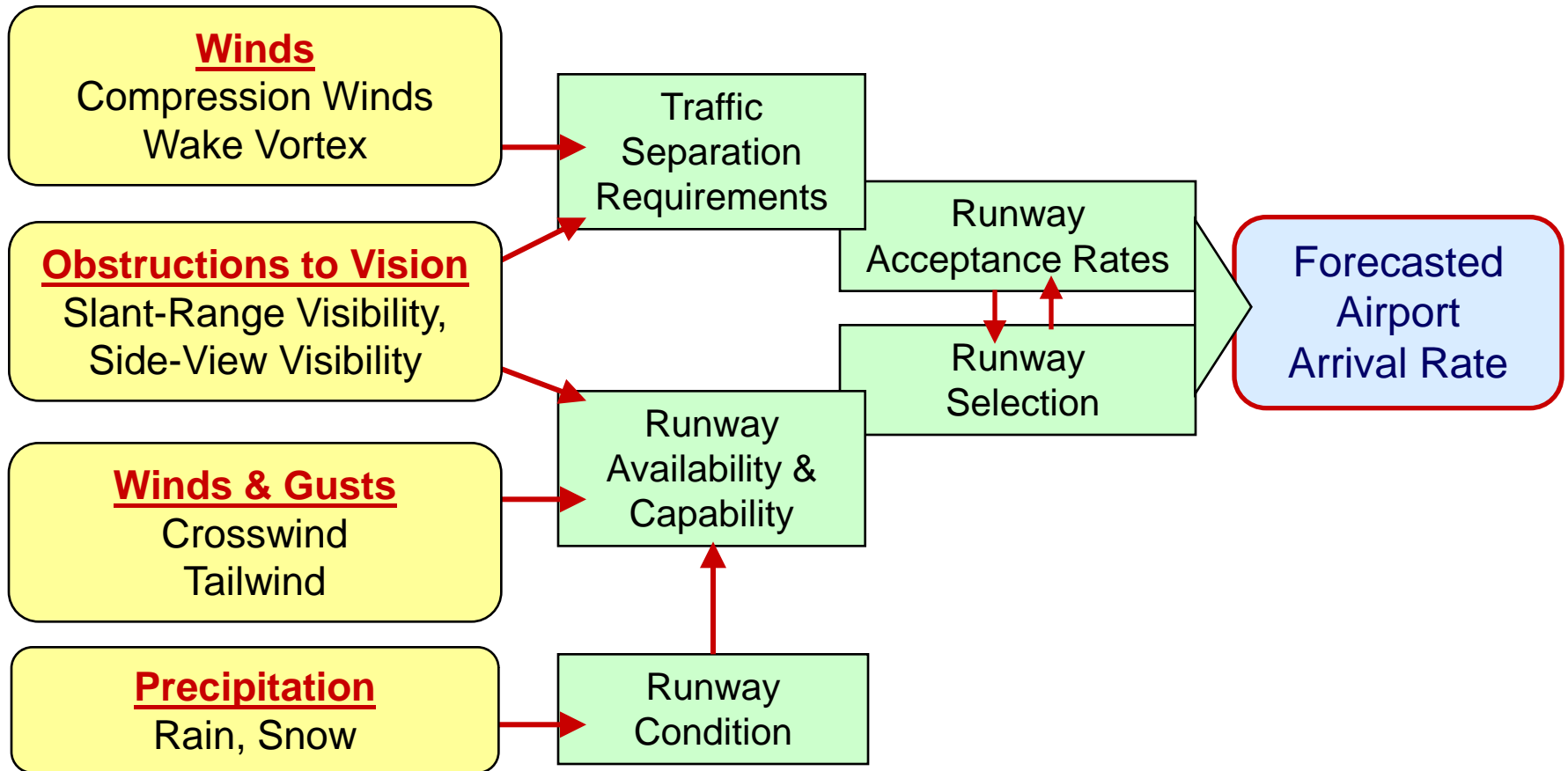
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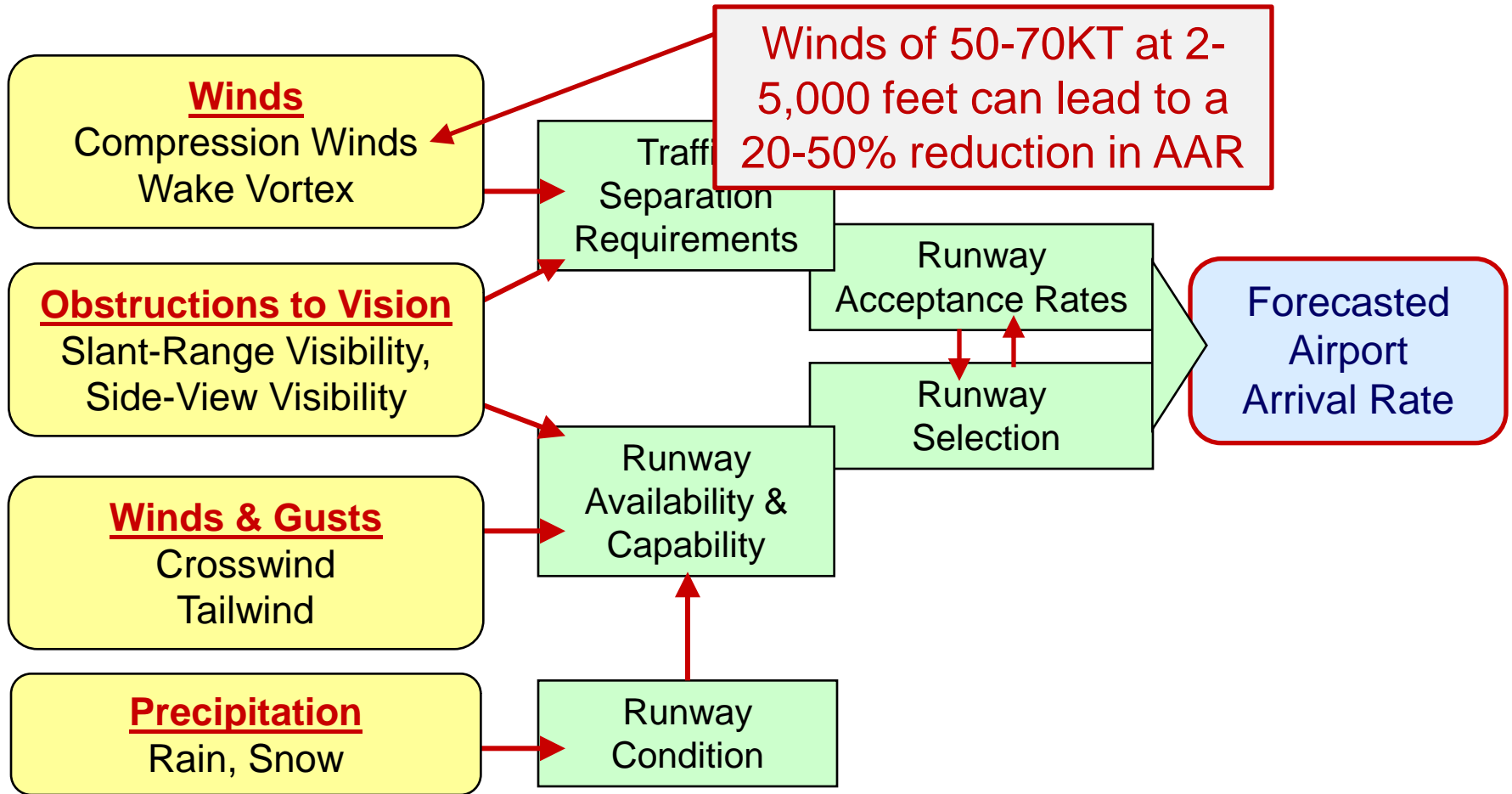
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# Weather in Forecasted Airport Capacity

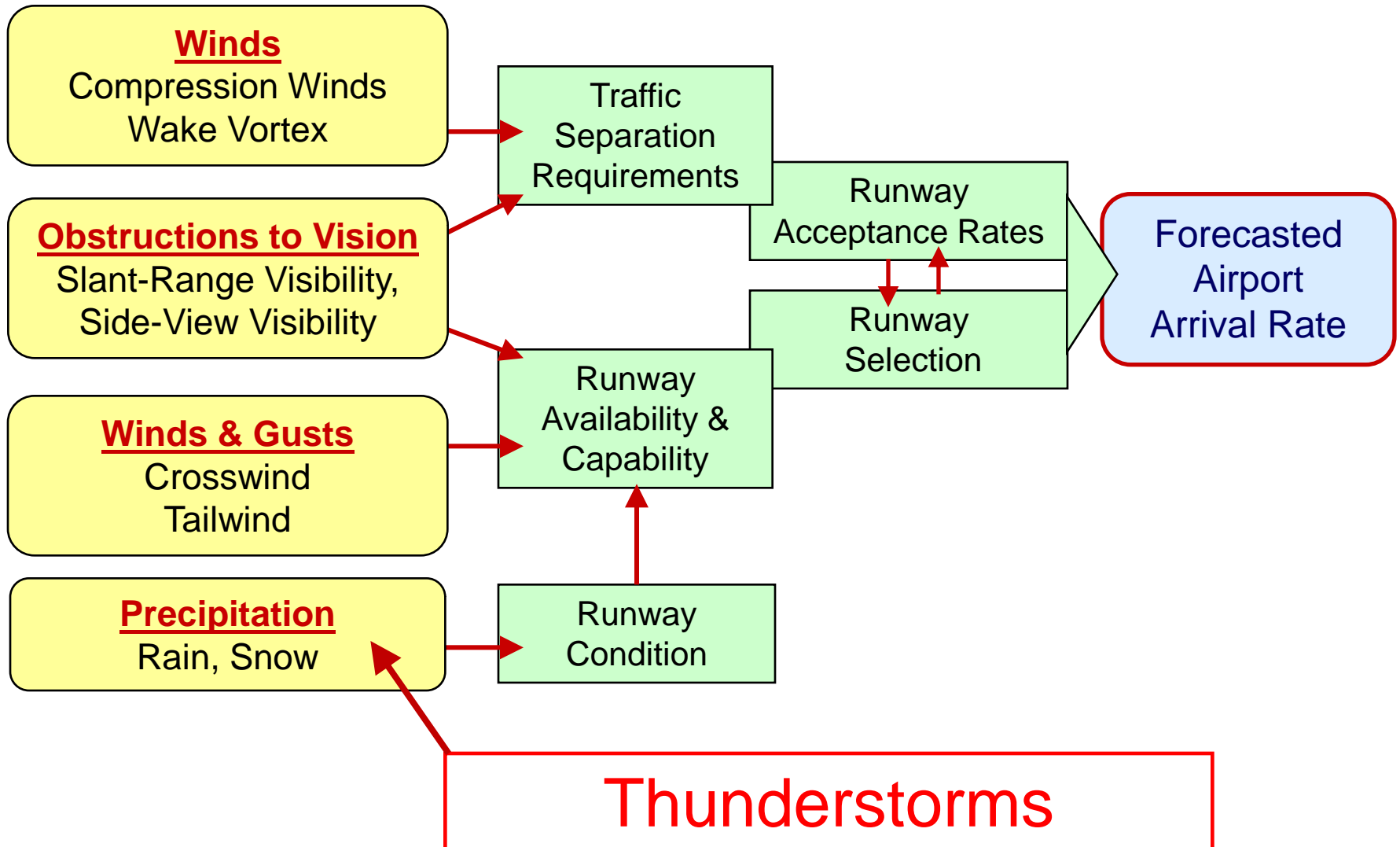


# Weather in Forecasted Airport Capacity

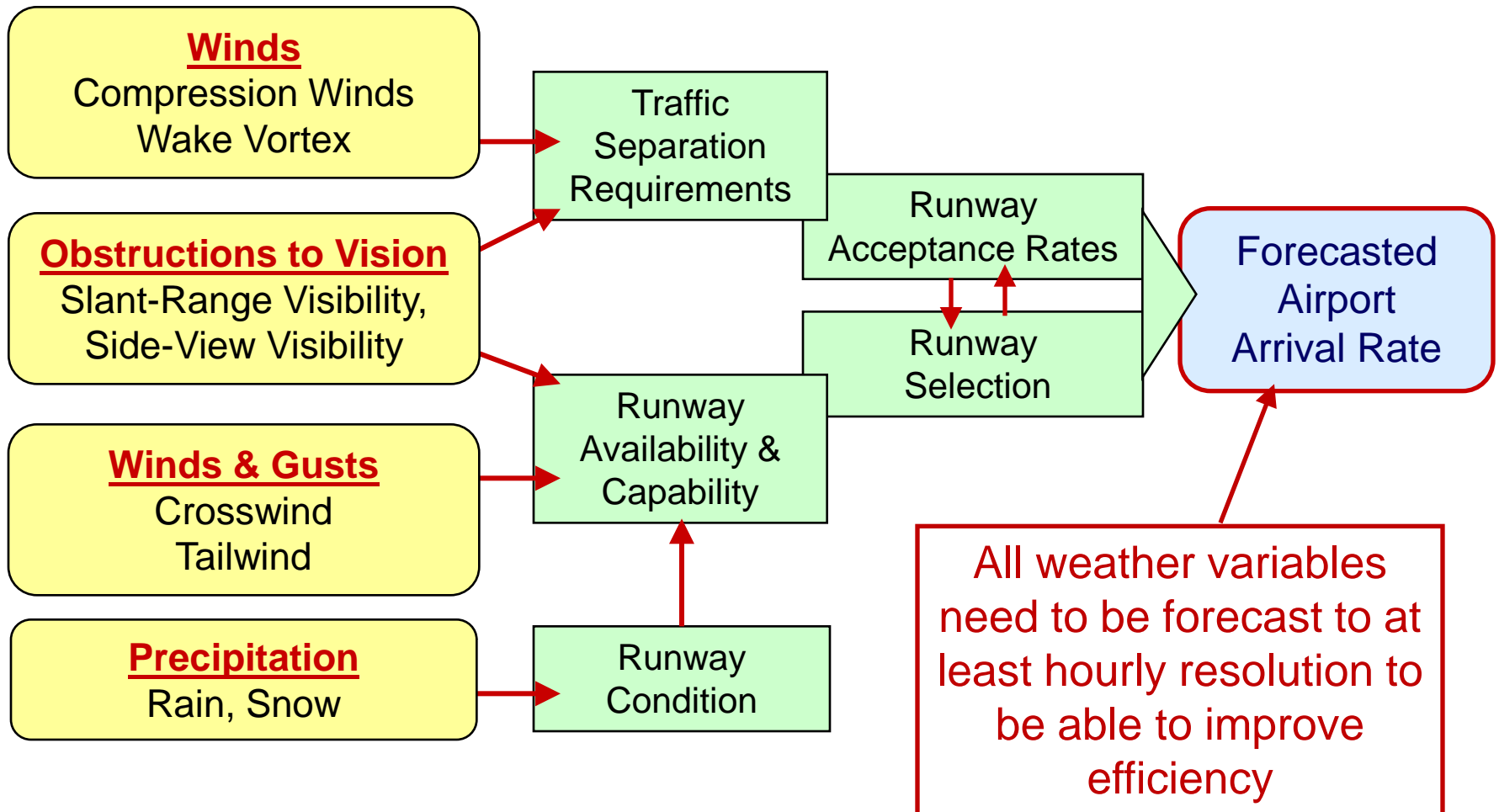




# Weather in Forecasted Airport Capacity



# Weather in Forecasted Airport Capacity



# KEWR Terminal Weather:

5MIN KEWR 151200Z 27009KT 10SM BKN029 10/06 A2954 370  
 77 -100 280/09 RMK AO2 CIG 028V030  
 5MIN KEWR 151155Z 26008KT 10SM OVC030 10/06 A2954 370  
 77 -100 270/08 RMK AO2

SPUS70 KEWR 151204  
 SPECI KEWR 151201Z 27010KT 10SM FEW023 BKN029 10/06 A2955 RMK AO2 CIG  
 028V030

FTUS80 KEWR 151121 RRF  
 KEWR 151120Z 1512/1618 28011G18KT P6SM SCT025 BKN070 OVC120  
 TEMPO 1512/1514 BKN020  
 FM151500 29018G26KT P6SM SCT035 BKN070  
 TEMPO 1516/1518 BKN035  
 FM151800 29022G31KT P6SM BKN035 OVC070  
 FM152100 30025G36KT P6SM BKN035 OVC070  
 FM160200 29018G27KT P6SM SCT040 BKN060  
 FM160900 30016G25KT P6SM BKN120 OVC200  
 FM161200 31015G30KT P6SM SKC  
 FM161500 32025G35KT P6SM SCT035

**AIRPORT:** KEWR-NEWARK INTERNATIONAL AIRPORT  
**Updated:** 10/15/2010 at 12:16  
[View TAF](#) | [View WFO/CWSU Discussion](#)

Hour-UTC	0B	13	14	15	16	17	18	19	20	21	22	23
CIG<5Kft	29	NS 20	NS	NS	NS 35	NS 35	35	35	35	35	35	35
VIS-SM	10	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6	>6
WX	N	N N	N	N	N N	N N	N	N	N	N	N	N
FLTCAT	M	V	V	V	V	V	V	V	V	V	V	V
WDIR	270	280	280	290	290	290	290	290	290	300	300	300
WSPD-Kts	10	11	11	18	18	18	22	22	22	25	25	25
WGST-Kts	10	18	18	26	26	26	31	31	31	36	36	36
R-X-T												
RY-4/22	R22-9-4	R22-11-3	R22-11-3	R22-18-2	R22-18-2	R22-18-2	R22-22-2	R22-22-2	R22-22-2	R4-25-2	R4-25-2	R4-25-2
RY-11/29	R29-1-10	R29-1-11	R29-1-11	R29-5-17	R29-5-17	R29-5-17	R29-6-21	R29-6-21	R29-6-21	R29-11-23	R29-11-23	R29-11-23

KEWR FCSTER COMMENTS: AMENDMENTS POSSIBLE FOR VARIABLE CEILING AND WIND DIRECTION AND SPEED...ESPECIALLY THIS MORNING.

# Other Factors

## Deicing Weather

- Slows down Departures
- Some Precipitation types/intensities prevent departures (Heavy Snow, Moderate-Heavy Ice Pellets, Moderate-Heavy Freezing Rain)
- If arrivals continue, can lead to gridlock

## Thunderstorms enroute or terminal area significantly impact operations

- Multiple efforts to improve T-storm Forecasts (CDM-WET, CCFP, CoSpa)

## Volcanic Ash

- Icelandic Volcano grounded all flights to/from Europe for 5 days



# Recommendations

- Continue CDM/Nextgen Efforts
- Continue WVSS (Water Vapor Sensing System) on aircraft to improve ceiling/visibility/weather forecasts
- Look at ways to improve operations during winter storm/deicing events

