Short-Haul Transportation to and from New York

The Effect of Airport Congestion on Mode Choice

Aviation Planning at the Leading Edge

Presentation to:

FAA Forecast Conference

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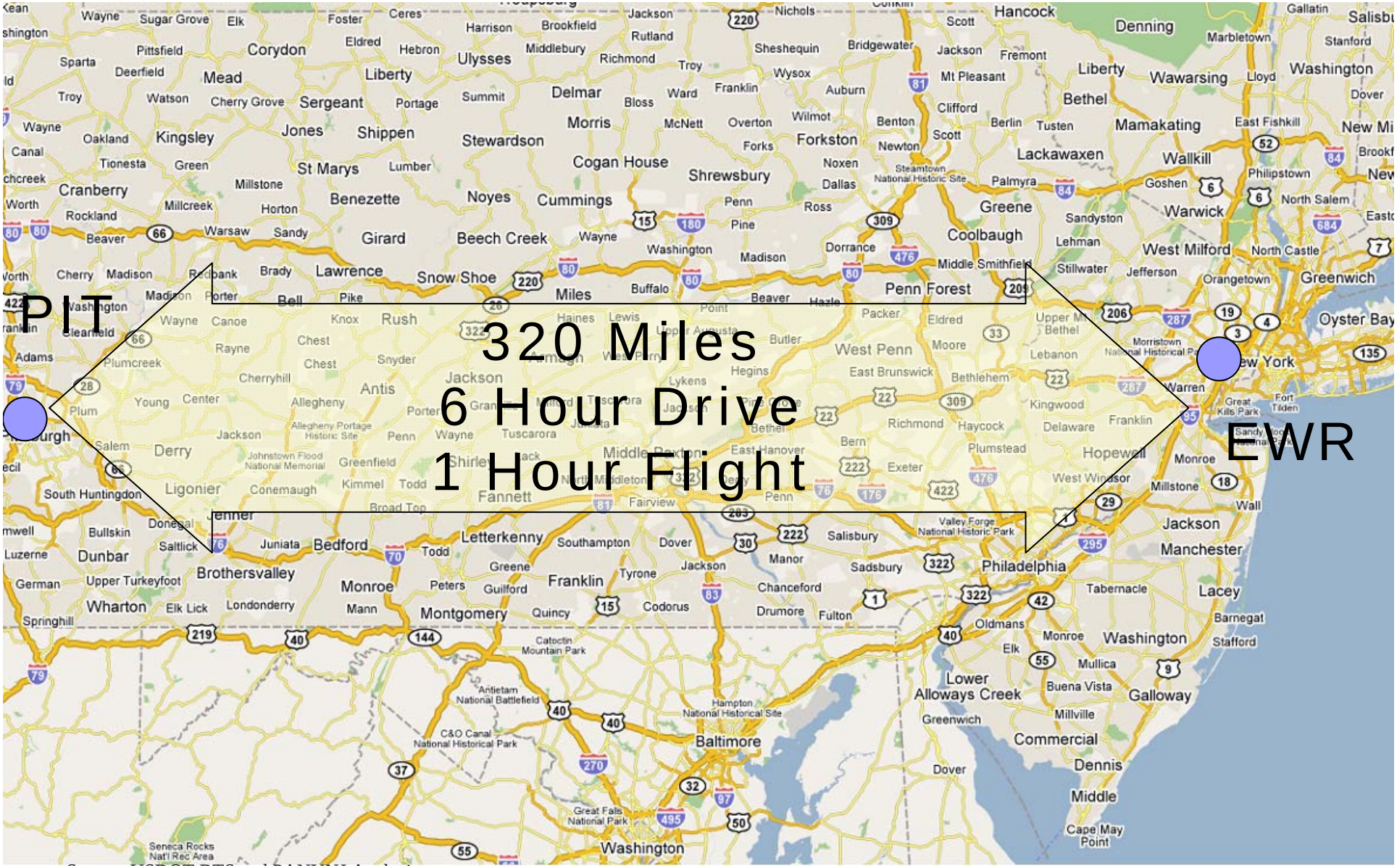
Effect of Delay on Mode Choice

- Airport delays and congestion have increased
  - Well documented
  - Have many causes
- Delay and congestion reduce short-haul demand
  - Short-haul market case study
  - Generalization to NY market
- Economics of short-haul travel
  - Trip costs by modes
  - Time savings
- Opportunities for the future

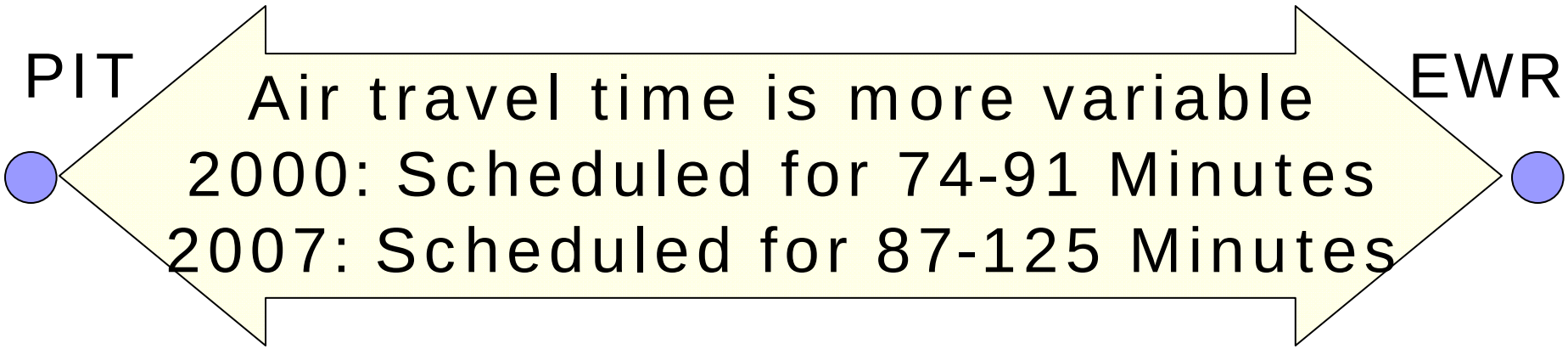
Example Short-Haul Flight: PIT/EWR

Aviation Planning at the Leading Edge



Block time has steadily increased while airborne time has not

Aircraft Trip Time	1999	2005	2007	
Scheduled Time	83	89	101	minutes
Actual Time	89	95	99	minutes
Actual Airborne Time	59	58	57	minutes
Actual Ground Time	30	37	42	minutes
Percent on-time	69%	66%	69%	
Percent cancelled	5%	6%	5%	



Air Travel is Not Just the Flight

Passenger Trip Time	2000	2005	2007
Travel to Airport (minutes)	45	45	45
Time in Origin Airport	40	70	70
Average Aircraft Taxi Time	30	37	42
Average Aircraft Flight Time	59	58	57
Time in Destination Airport	15	15	15
Travel to Destination	45	45	45
Total Time by Air Transportation (minutes)	**234**	**270**	**274**
Avg. Speed of Air Transportation (MPH)	**82**	**71**	**70**
Total Driving time	**360**	**360**	**360**
Average Driving Speed (MPH)	**53**	**53**	**53**
Time Save by Air Transportation	**126**	**90**	**86**

New Security Rules

Increased Airside Congestion

PIT

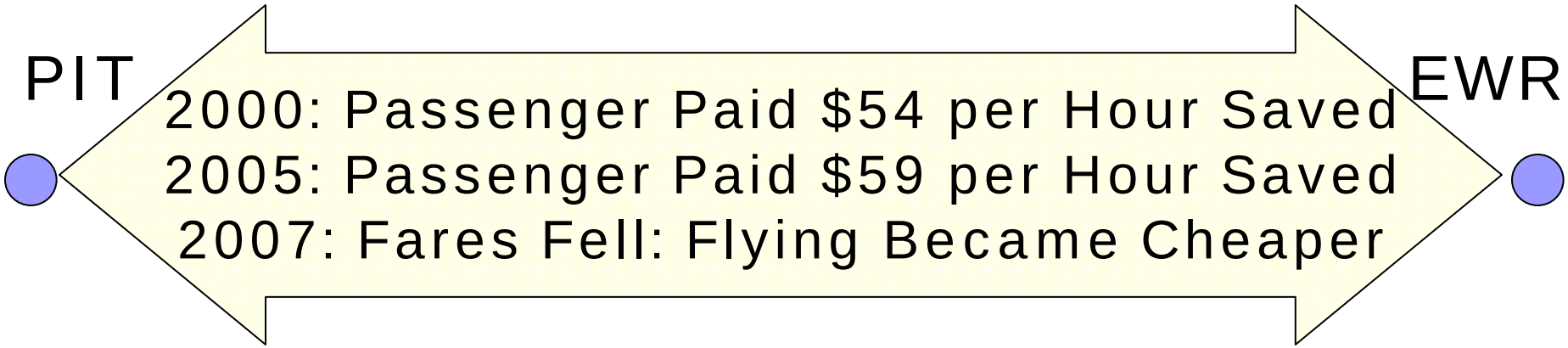
EWR

Airborne just 21% of trip time

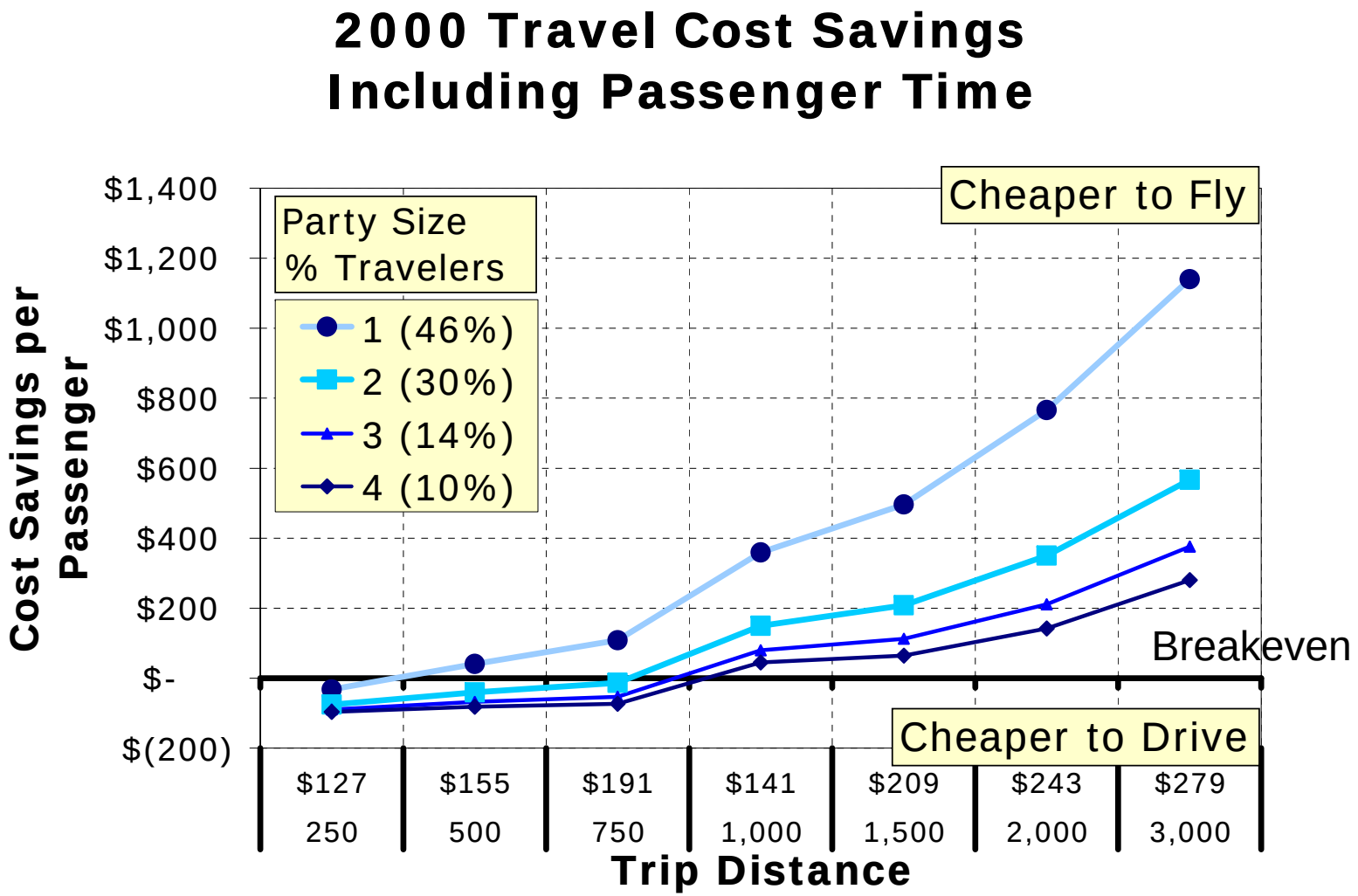
Driving becoming a reasonable option

Economy Drives Mode Choice

	2000	2005	2007
Cost to Drive	$ 102	$ 123	$ 158
Average One-Way Fare Paid	$ 216	$ 211	$ 117
Net Cost of Flight	$ 114	$ 88	$ (41)
Hourly Cost of Time Saved	$ 54	$ 59	$ (29)
3rd Quarter Passengers Carried	48,320	42,420	46,340

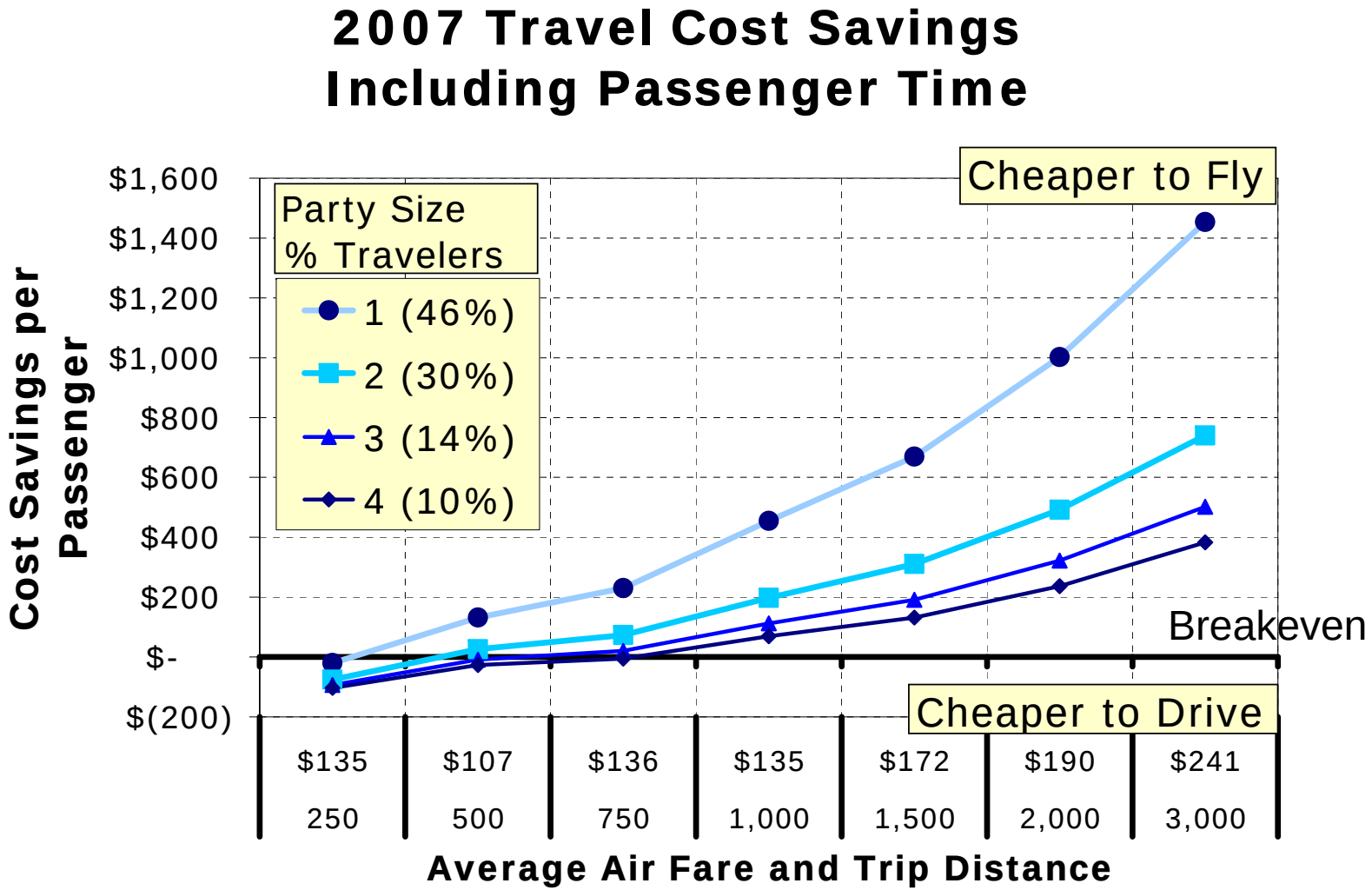


2000: Driving Competed Favorably on Trips up to 750 Miles



Passenger Time Valued at NY/NJ Minimum Wage of $7.15 per Hour

2007: Declining Fares Have Improved Economics of Flying 500-1,000 miles



Passenger Time Valued at NY/NJ Minimum Wage of $7.15 per Hour

Short Flights Have Lost More Than Half Their Value – Traffic Declined

	250 Mile Trip		
	2000	2007	
Driving Time	4.2	4.2	Hours
Flying Time	2.9	3.6	Hours
Time Saved	1.3	0.6	Hours
Average Air Fare	$ 127	$ 135	
Cost per Hour Saved	$ 98	$ 214	
3rd Quarter Passengers	1,427,840	936,700	34% Decline

- *Passenger time in the airport and airfield congestion have reduced value of short-haul service*
- *Short-haul aircraft operating costs have increased*
- *Short-haul service levels have declined*
- *Airlines have shifted remaining service towards feeding connecting gateway hubs*
- *Weaker product*

Airlines Have Improved Value of Medium-Haul Flights by Cutting Fares

	500 Mile Trip		
	2000	2007	
Driving Time	8.0	8.0	Hours
Flying Time	3.4	4.1	Hours
Time Saved	4.6	3.9	Hours
Average Air Fare	$ 155	$ 107	
Cost per Hour Saved	$ 34	$ 27	
3rd Quarter Passengers	1,116,200	1,562,320	40% Increase

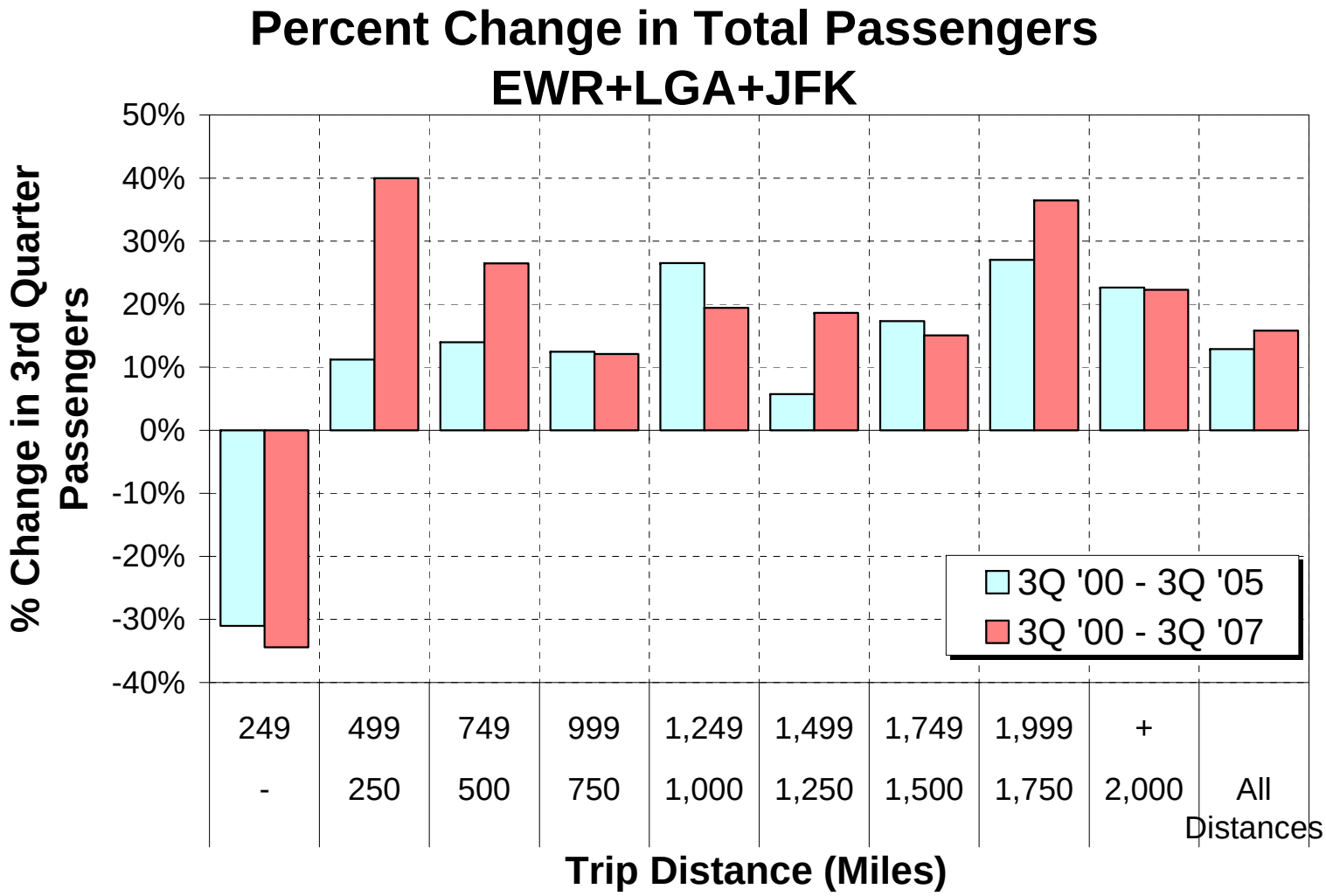
- *Increases in passenger volume have not fully offset lost revenue*
- *Time will tell whether airlines can sustain this air service model*

Longer-Haul Air Travel Relatively Unaffected

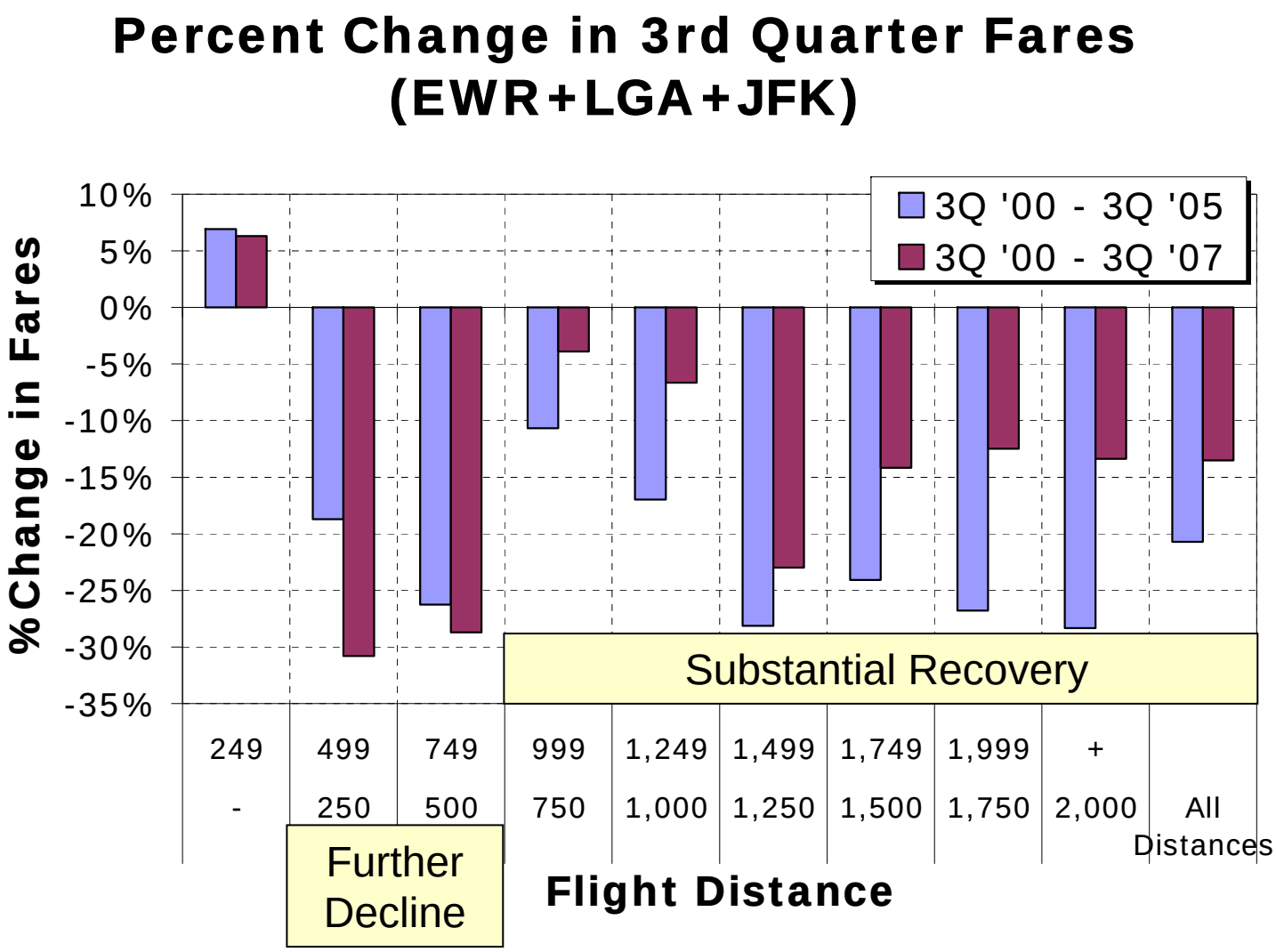
	1,000 Mile Trip		
	2000	2007	
Driving Time	15.7	15.7	Hours
Flying Time	4.4	5.1	Hours
Time Saved	11.3	10.6	Hours
Average Air Fare	$ 141	$ 135	
Cost per Hour Saved	$ 12	$ 13	
3rd Quarter Passengers	1,962,500	2,199,840	12% Increase

- *Fares have declined slightly*
- *Flying still delivers strong travel value*
- *Passenger volumes increased in line with economic growth*

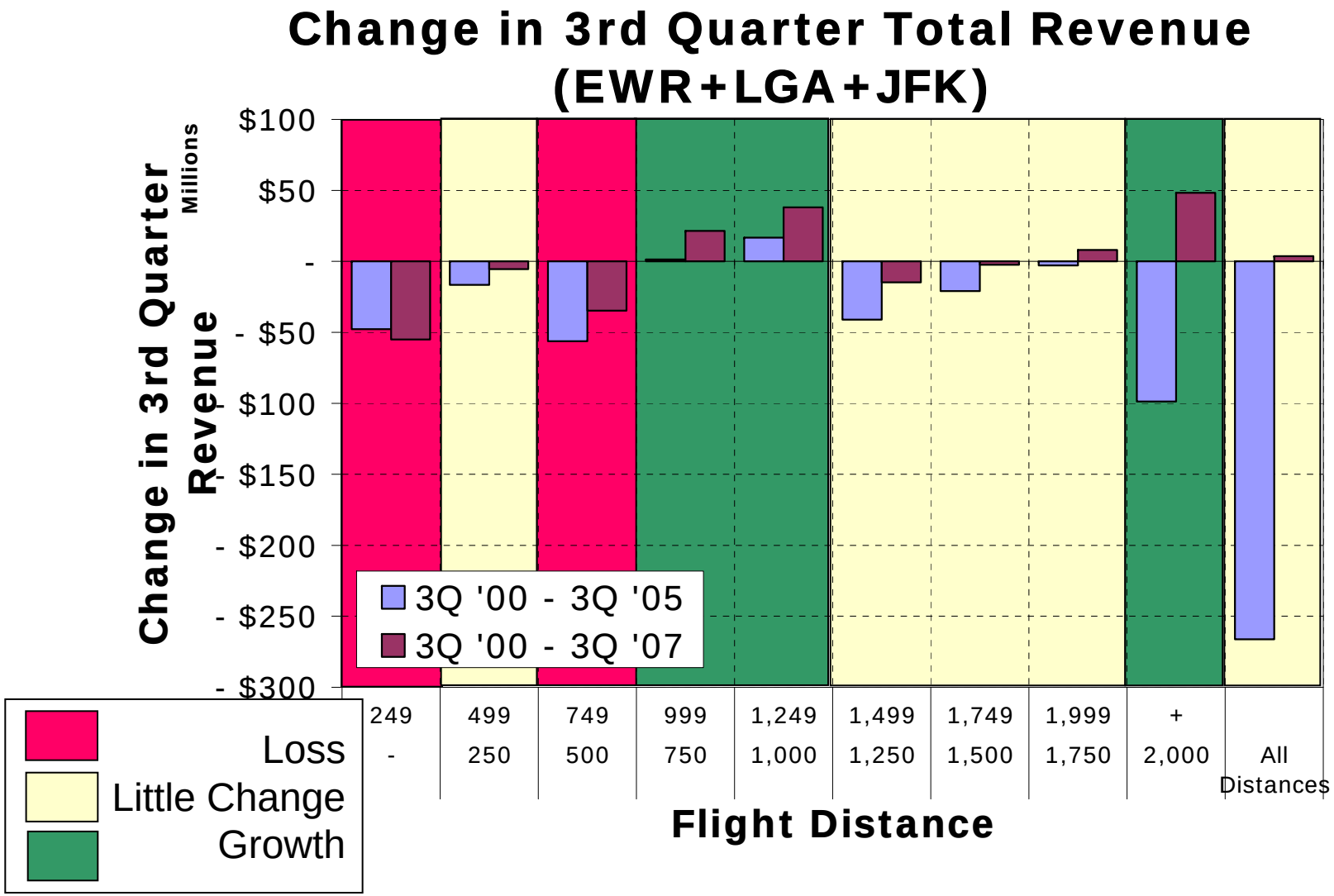
Very short-haul air travel remains down while all other travel increased



Longer-haul fares have increased
Shorter-haul fares have continued declining



Total Revenue at 2000 levels
Shorter-haul revenue still down



If we do nothing:

- Higher gasoline prices will move inter-city passengers from cars to bus, rail, and air
- Air will remain mode of choice for travel greater than 500 miles despite high levels of airport congestion and delay
- Air travel for destinations less than 250 miles will continue to decline
- Air travel for destinations from 250 to 500 miles will decline if travel times or fares increase

Airlines have small market share of Northeast Corridor inter-city travel

Mode	2006	2007	% Change
Passengers			
Acela Rail	2,668,000	3,191,000	20%
Regional Rail	6,755,000	6,837,000	1%
Air Travel	1,690,000	1,649,000	-2%
On-Time Performance			
Acela Rail	85%	88%	4%
Regional Rail	78%	78%	0%
Air Travel	74%	73%	-1%
Revenue per Passenger			
Acela Rail	$123	$126	3%
Regional Rail	$59	$62	6%
Air Travel	$114	$128	12%

Lessons learned from the Northeast Corridor

- Rail provides a real alternative to driving or flying
  - Should match driving speeds (including stops)
  - Intermediate stops reduce attractiveness of rail and air
  - Can charge premium price at higher than driving speeds
- Rail viable in high-density markets
  - Demand substantially less in thin markets
  - Commuter rail provides greatest airport feed at JFK and EWR
- Most Acela growth comes from I-95
- Air travel losing market share to Acela

More activist approaches:

- Improve large-hub airport capacity to reduce air system travel times
  - Restore short-haul air travel efficiency
  - Improve schedule consistency
- Improve ground transportation infrastructure to increase speed of short-haul travel
  - Diversion of demand improves efficiency of airports for long-haul travel (air's natural modal monopoly)
- Improving connectivity between all modes will reduce need for connecting short-haul flights at congested airports