FAA Regional Air Service Demand Study

Grant #:
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(Phase I)
3-36-0000-04-05
(Phase II)

Task B — Forecast of Passengers, Operations and Other Activities for Long Island MacArthur Airport

May 2007

New York State Department of Transportation

SWF –
Stewart International Airport

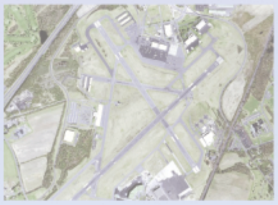
HPN –
Westchester County Airport

ISP –
Long Island MacArthur Airport

Delaware Valley Regional Planning Commission

ABE –
Lehigh Valley International Airport

ACY –
Atlantic City International Airport



TTN –
Trenton Mercer Airport

Port Authority of New York & New Jersey

JFK –
John F. Kennedy International Airport

LGA –
LaGuardia Airport

EWR –
Newark Liberty International Airport

SPONSORS:

Federal Aviation Administration

New York State Department of Transportation

FAA Regional Air Service Demand Study

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Grants

NYSDOT: 3-36-0000-002-03 (Phase I); 3-36-0000-04-05 (Phase II)

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EXECUTIVE SUMMARY
INTRODUCTION/PURPOSE

This report presents comprehensive forecasts of aviation demand at Long Island Mac Arthur Airport for the years 2005 through 2015, 2020, and 2025. These forecasts were prepared as part of the Federal Aviation Administration (FAA) Regional Air Service Demand Study, which evaluated future demand at the following nine New York City-area airports:

- John F. Kennedy International Airport (JFK) - PANYNJ
- Newark Liberty International Airport (EWR) - PANYNJ
- LaGuardia Airport (LGA) - PANYNJ
- Westchester County Airport (HPN) - NYSDOT
- Long Island MacArthur Airport (ISP) - NYSDOT
- Stewart International Airport (SWF) - NYSDOT
- Atlantic City International Airport (ACY) - DVRPC
- Trenton Mercer Airport (TTN) - DVRPC
- Lehigh Valley International Airport (ABE) - DVRPC

PANYNJ = Port Authority of New York & New Jersey
NYSDOT = New York State Department of Transportation
DVRPC = Delaware Valley Regional Planning Commission

Demand for the nine-airport region as a whole was taken into consideration in developing the forecasts for the individual airports. The forecasts presented in this report represent market-driven demand for air service and are therefore considered "unconstrained." In other words, for purposes of estimating demand, the forecasts assume facilities can be provided to meet the demand. However, because each of the airports already has facility and/or policy constraints, historical traffic was also limited, so the forecasts inherently reflect the existing constraints.

A baseline forecast was developed that represents the most likely level of activity at each of the nine airports. In addition, optimistic and pessimistic scenarios were developed to show the broad range of possible aviation activity that could be experienced over the next 20 years. It is important to explore a range of possible future growth scenarios. This will allow each airport to avoid being surprised by potential rapid growth or unexpected slowdowns in growth. These forecasts provide a full-range of information from which it will be possible to anticipate each airport's future activity, and plan for facilities that might be needed to accommodate future air transportation demand.

Separate forecast reports were prepared for each airport. The first two sections of this report contain information pertaining to all nine airports in the study area. The remaining sections contain information that is specific to ISP.

SUMMARY OF FINDINGS
ANNUAL FORECASTS OF AVIATION ACTIVITY

This section contains a summary of the forecast results for the baseline forecasts and the optimistic and pessimistic scenarios for ISP. **Table 1** and **Exhibit 1** show a summary of forecast of enplaned passengers through 2025 for the baseline case and the two scenarios. Total enplaned passengers in the base case are forecast to grow from 1.1 million in 2005 to 1.6 million by 2025, representing average annual growth of two percent.

Table 1
ISP ENPLANED PASSENGER FORECAST SUMMARY

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	567,929		
	2000	1,119,833		
Estimate	2005	1,055,503		
Estimate	2006	1,138,000		
Forecast	2007	1,156,700	1,307,300	1,147,400
	2008	1,175,800	1,414,400	1,156,900
	2009	1,195,100	1,496,300	1,166,600
	2010	1,214,800	1,564,500	1,176,400
	2011	1,234,800	1,624,100	1,186,400
	2012	1,255,200	1,678,000	1,196,600
	2013	1,276,000	1,727,800	1,207,000
	2014	1,297,000	1,774,400	1,217,500
	2015	1,318,400	1,818,700	1,228,200
	2020	1,431,500	2,019,800	1,284,700
	2025	1,555,000	2,205,800	1,346,500
Average Annual Growth Rates				
	1995-2005	6.4%		
	2005-2015	2.2%	5.6%	1.5%
	2015-2025	1.7%	1.9%	0.9%
	2005-2025	2.0%	3.8%	1.2%

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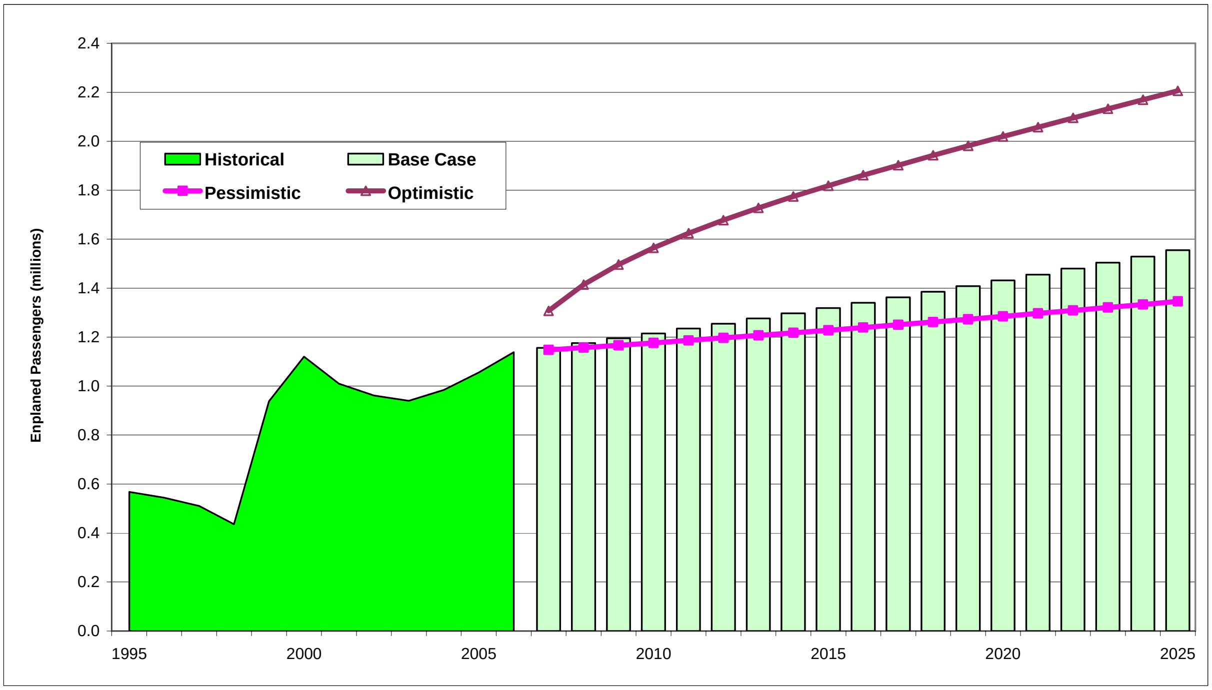
Source: Landrum & Brown

Exhibit 1
ISP FORECASTS OF TOTAL ANNUAL PASSENGERS



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Source: Landrum & Brown

Optimistic and pessimistic scenarios were developed for ISP. The optimistic scenario is not meant to represent the absolute maximum activity that is possible at each airport during the forecast period. By the same token, the pessimistic scenario does not represent a gloom and doom case. Rather, these scenarios represent realistic possibilities that could cause future activity to deviate from the baseline forecast.

The optimistic scenario is based on Southwest Airlines' potential for expansion. The optimistic scenario results in 2.2 million enplaned passengers in 2025, representing an average annual growth rate of 3.8 percent from 2005 to 2025.

The pessimistic scenario assumes low economic growth in the region with no changes to price or service. The pessimistic scenario results in 1.3 million enplaned passengers in 2025 (1.2 percent average annual growth from 2005 to 2025).

Table 2 and **Exhibit 2** show historical and forecast annual aircraft operations for the base case and the optimistic and pessimistic scenarios. Annual aircraft operations are forecast to increase from 170,635 in 2005 to 232,410 in 2025 in the base case, an average annual increase of 1.6 percent. The optimistic scenario results in 246,860 aircraft operations in 2025, representing average annual growth of 1.9 percent from 2005 to 2025. The pessimistic scenario results in an average increase of 1.5 percent annually to 227,790 operations in 2025.

Table 2
ISP FORECASTS OF TOTAL AIRCRAFT OPERATIONS

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	183,453	183,453	183,453
	2000	238,239	238,239	238,239
Estimate	2005	170,635	170,635	170,635
Estimate	2006	187,948	187,948	187,948
Forecast	2007	190,150	194,070	189,910
	2008	193,540	199,690	193,050
	2009	196,980	204,680	196,250
	2010	200,520	209,360	199,540
	2011	202,470	212,220	201,250
	2012	204,420	214,910	202,970
	2013	206,410	217,510	204,710
	2014	208,430	220,060	206,490
	2015	210,470	222,540	208,290
	2020	221,100	234,690	217,710
	2025	232,410	246,860	227,790
Average Annual Growth Rates				
	1995-2005	-0.7%		
	2005-2015	2.1%	2.7%	2.0%
	2015-2025	1.0%	1.0%	0.9%
	2005-2025	1.6%	1.9%	1.5%

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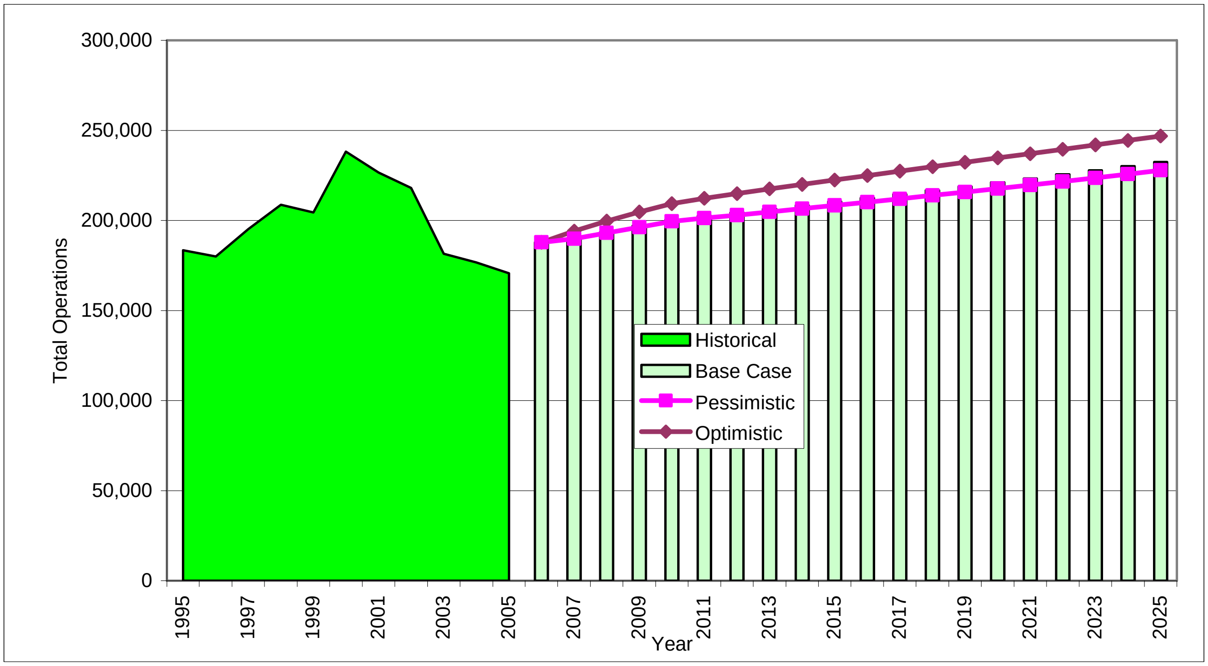
Source: Landrum & Brown

Exhibit 2
ISP FORECASTS OF TOTAL AIRCRAFT OPERATIONS



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Source: Landrum & Brown

2005 TERMINAL AREA FORECAST & 2003 TERMINAL AREA PLAN FORECAST COMPARISON

Table 3 presents a comparison of the 2005 FAA Terminal Area Forecast (TAF) and the 2003 Terminal Area Plan Forecast (TAP) for ISP to the ISP forecasts developed for the FAA Regional Air Service Demand Study. Both the TAF and TAP project more robust growth in enplanements compared to the base case for ISP. The TAP enplanement forecast for 2005 (1.6 million) is 50.6 percent above the actual enplanement level for 2005 (1.1 million).

Projected operations in the TAF are slightly lower than the base case forecast, but remain within 10 percent throughout the forecast period. The TAP operations forecast for 2005 (235,910) is 38.3 percent above the actual operations level for 2005 (170,635).

Table 3
ENPLANED PASSENGER AND ANNUAL OPERATIONS FORECAST COMPARISON

	Enplanements					Aircraft Operations				
Year	2006 Forecast	2005 TAF	Variance	2003 TAP	Variance	2006 Forecast	2005 TAF	Variance	2003 TAP	Variance
1995	567,929	565,521				183,453	188,314			
1996	544,296	732,143				179,986	175,750			
1997	510,096	682,178				195,230	195,841			
1998	435,960	436,392				208,625	200,208			
1999	938,300	784,761				204,380	207,707			
2000	1,119,833	1,140,129				238,239	229,617			
2001	1,009,779	1,040,633		1,329,618	31.7%	226,591	232,430		220,973	-2.5%
2002	961,102	945,290		1,392,931	44.9%	218,053	223,063		225,071	3.2%
2003	939,839	949,071		1,457,372	55.1%	181,513	185,234		228,694	26.0%
2004	984,987	965,854		1,522,982	54.6%	176,668	177,946		232,327	31.5%
2005	1,055,503	1,026,685		1,589,801	50.6%	170,635	176,079		235,910	38.3%
2006	1,137,993	1,077,624	-5.3%	1,657,880	45.7%	187,948	178,643	-5.0%	239,444	27.4%
2007	1,156,700	1,118,315	-3.3%	1,727,256	49.3%	190,150	181,009	-4.8%	242,944	27.8%
2008	1,175,800	1,160,554	-1.3%	1,797,979	52.9%	193,540	183,422	-5.2%	246,408	27.3%
2009	1,195,100	1,204,401	0.8%	1,870,097	56.5%	196,980	185,880	-5.6%	250,161	27.0%
2010	1,214,800	1,249,917	2.9%	1,943,661	60.0%	200,520	188,386	-6.1%	253,891	26.6%
2011	1,234,800	1,297,166	5.1%	2,018,727	63.5%	202,470	190,944	-5.7%	257,602	27.2%
2012	1,255,200	1,346,214	7.3%	2,095,340	66.9%	204,420	193,551	-5.3%	261,295	27.8%
2013	1,276,000	1,397,132	9.5%	2,173,568	70.3%	206,410	196,210	-4.9%	264,972	28.4%
2014	1,297,000	1,449,989	11.8%	2,253,455	73.7%	208,430	198,922	-4.6%	268,638	28.9%
2015	1,318,400	1,504,861	14.1%	2,335,073	77.1%	210,470	201,256	-4.4%	272,291	29.4%
2016	1,340,300	1,561,823	16.5%	2,415,322	80.2%	212,540	203,636	-4.2%	275,792	29.8%
2017	1,362,500	1,620,959	19.0%	2,496,150	83.2%	214,650	206,064	-4.0%	279,331	30.1%
2018	1,385,100	1,682,349	21.5%	2,577,430	86.1%	216,770	208,538	-3.8%	282,929	30.5%
2019	1,408,100	1,746,081	24.0%	2,659,030	88.8%	218,910	211,065	-3.6%	286,524	30.9%
2020	1,431,500	1,812,245	26.6%	2,740,814	91.5%	221,100	213,641	-3.4%	290,117	31.2%
2021	1,455,400	1,880,933	29.2%			223,310	216,269	-3.2%		
2022	1,479,700	1,952,242	31.9%			225,540	218,953	-2.9%		
2023	1,504,300	2,026,275	34.7%			227,810	221,691	-2.7%		
2024	1,529,500	2,103,135	37.5%			230,090	224,487	-2.4%		
2025	1,555,000	2,182,930	40.4%			232,410	227,339	-2.2%		
Average Annual Growth Rate										
2005-25	2.0%	3.8%				1.6%	1.3%			
2001-20				3.9%					1.4%	

Sources: FAA, TAF; Landrum & Brown

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I. AIRPORT SERVICE AREAS

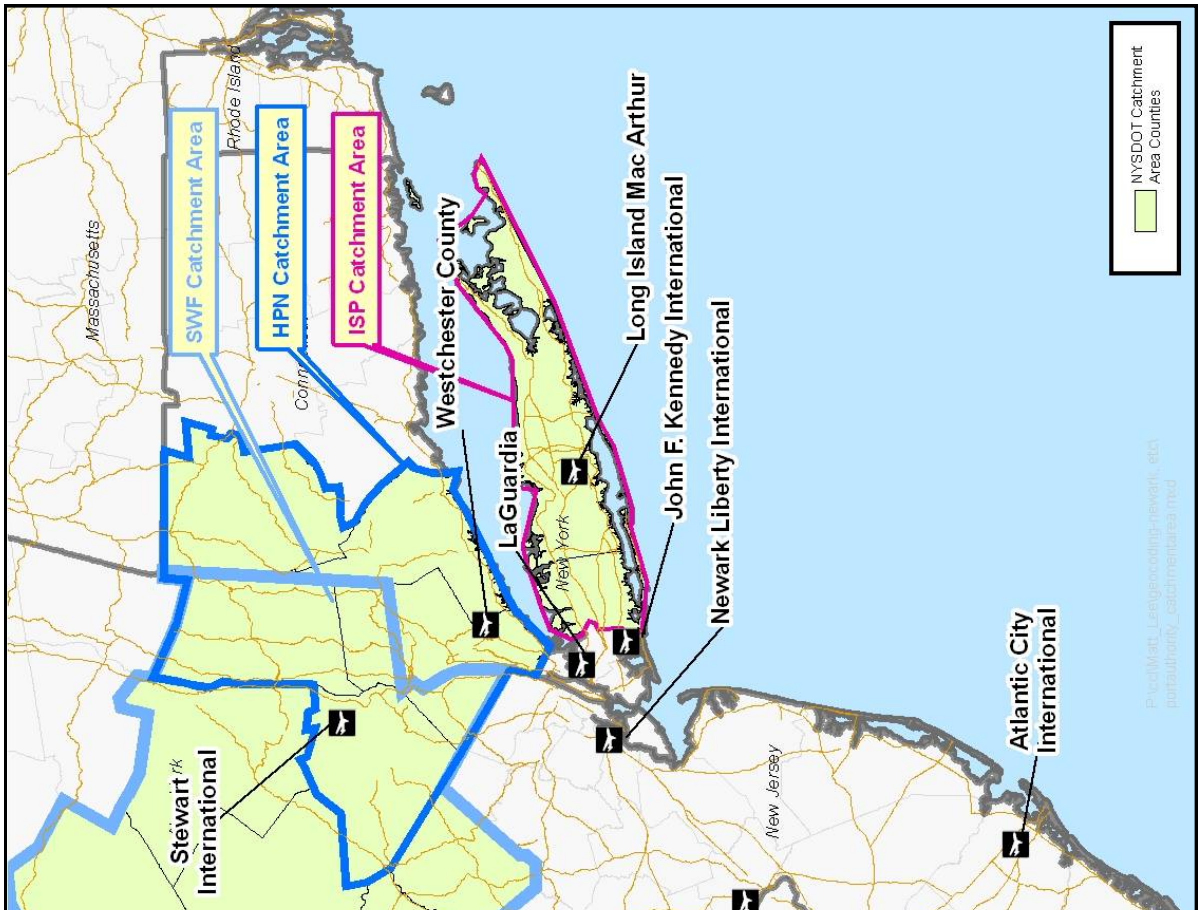
The service area (or catchment area) for the New York State Department of Transportation (NYSDOT) airports is a subset of the service area for the entire FAA, Regional Air Service Demand Study. The service areas for each of the NYSDOT airports are shown in **Exhibit I-1**. The service areas were defined using the air passenger survey conducted as part of the regional study.

I.1 ZIP CODE ANALYSIS OF PASSENGER SURVEYS

The surveys were conducted during a three-month period beginning in June and finishing in August 2005. A total of 3,300 usable surveys were collected; 1,100 from each airport. Approximately 1,600 surveys were distributed at each airport in order to obtain 1,100 completed, usable surveys. The definition of a usable survey included the zip code for the local trip origin and minimum demographic information about each passenger. Surveys were self-administered in the gate holdrooms at each airport.

Table I-1 shows a summary of the survey sampling plan for each of the three NYSDOT airports. The surveys were conducted between 6:00 am and midnight, seven days per week. As shown in the table, the distribution of surveys across airlines achieved the target sampling plan.

Exhibit I-1
AIRPORT SERVICE AREA DEFINITIONS



Source: NYSDOT, 2005 Air Passenger Survey

Table I-1
SUMMARY OF SURVEY SAMPLING PLAN

Airport	Airline	Target	Actual	Percent of Target
Long Island MacArthur	Southwest	957	893	93.3%
	Other	143	207	144.8%
	Total	1,100	1,100	100.0%
Stewart International	US Airways	400	395	98.8%
	American	280	276	98.6%
	Delta	160	161	100.6%
	Independence Air	140	141	100.7%
	Northwest	60	62	103.3%
	PanAm	50	52	104.0%
	US Air Express	10	13	130.0%
	Total	1,100	1,100	100.0%
Westchester County	Mesaba (NW)	191	131	68.6%
	Comair (DL)	188	158	84.0%
	Independence Air	167	128	76.6%
	United	139	223	160.4%
	American	139	168	120.9%
	PSA (US Air)	112	140	125.0%
	Other	89	39	43.8%
	Continental	75	113	150.7%
	Total	1,100	1,100	100.0%

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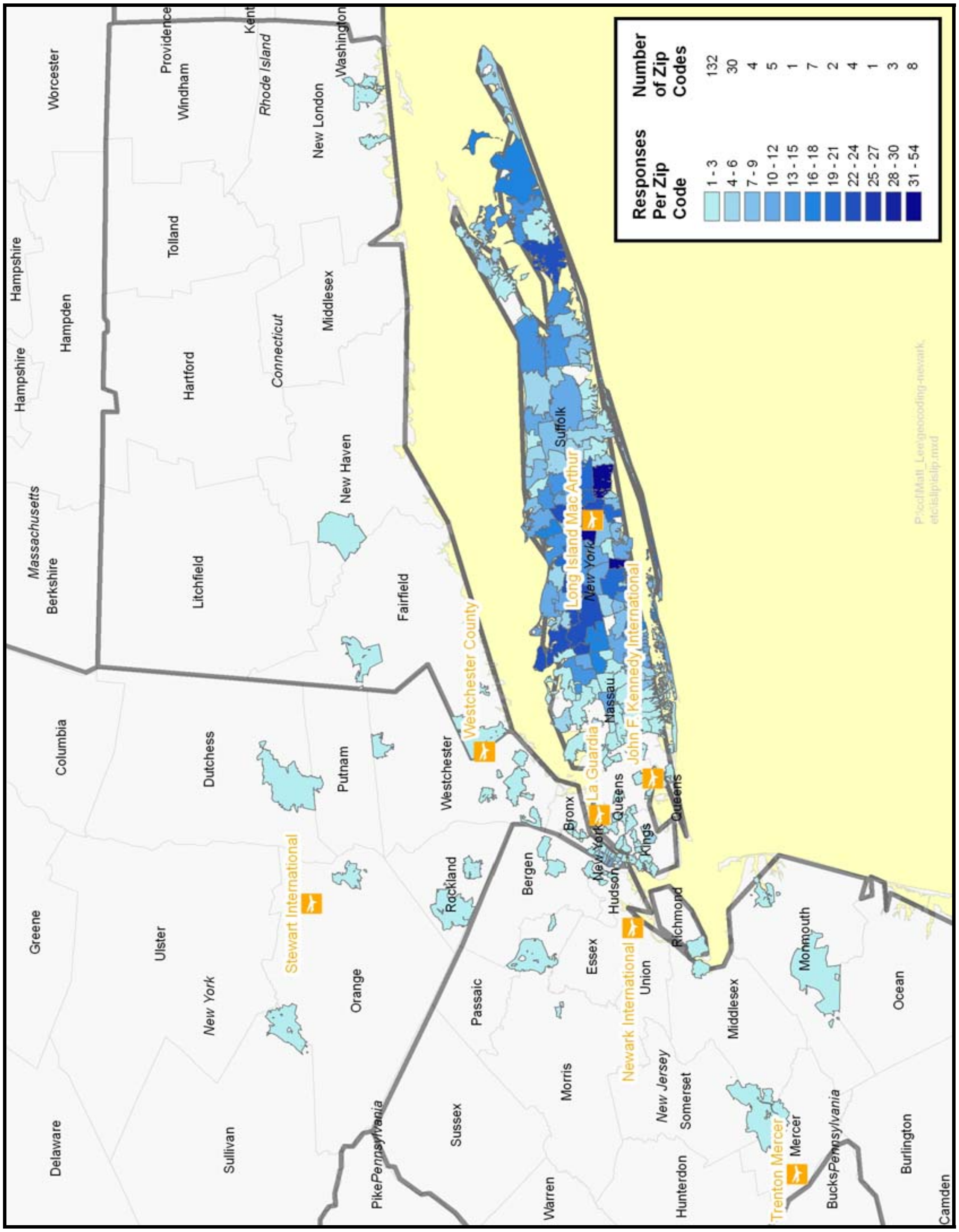
Source: NYSDOT, 2005 Air Passenger Survey

A key purpose of the survey was to identify the local origin of passenger trips to each airport at the zip code level. Zip codes were then assigned on a geographic basis to a county, based upon the majority of a zip code area being within that county. Survey findings were summarized on a county-by-county basis.

Other survey questions focused on airport preferences, alternative airports used, and identifying factors important for airport choice. In addition, the survey questions covered topics about trip purpose, the passenger's place of residence, mode of ground transportation to the airport, and the ultimate destination of the trip. Basic demographic information about the passenger was also gathered. All data was tested for significance at the 95 percent confidence level plus/minus three percent.

Exhibit I-2 shows the distribution of surveys by the zip code of passenger trip origin for ISP. Virtually all of the surveys came from Suffolk, Nassau, and New York (Manhattan) counties. About 81 percent of survey respondents were traveling for non-business reasons. Approximately 55 percent of the surveys were from visitors.

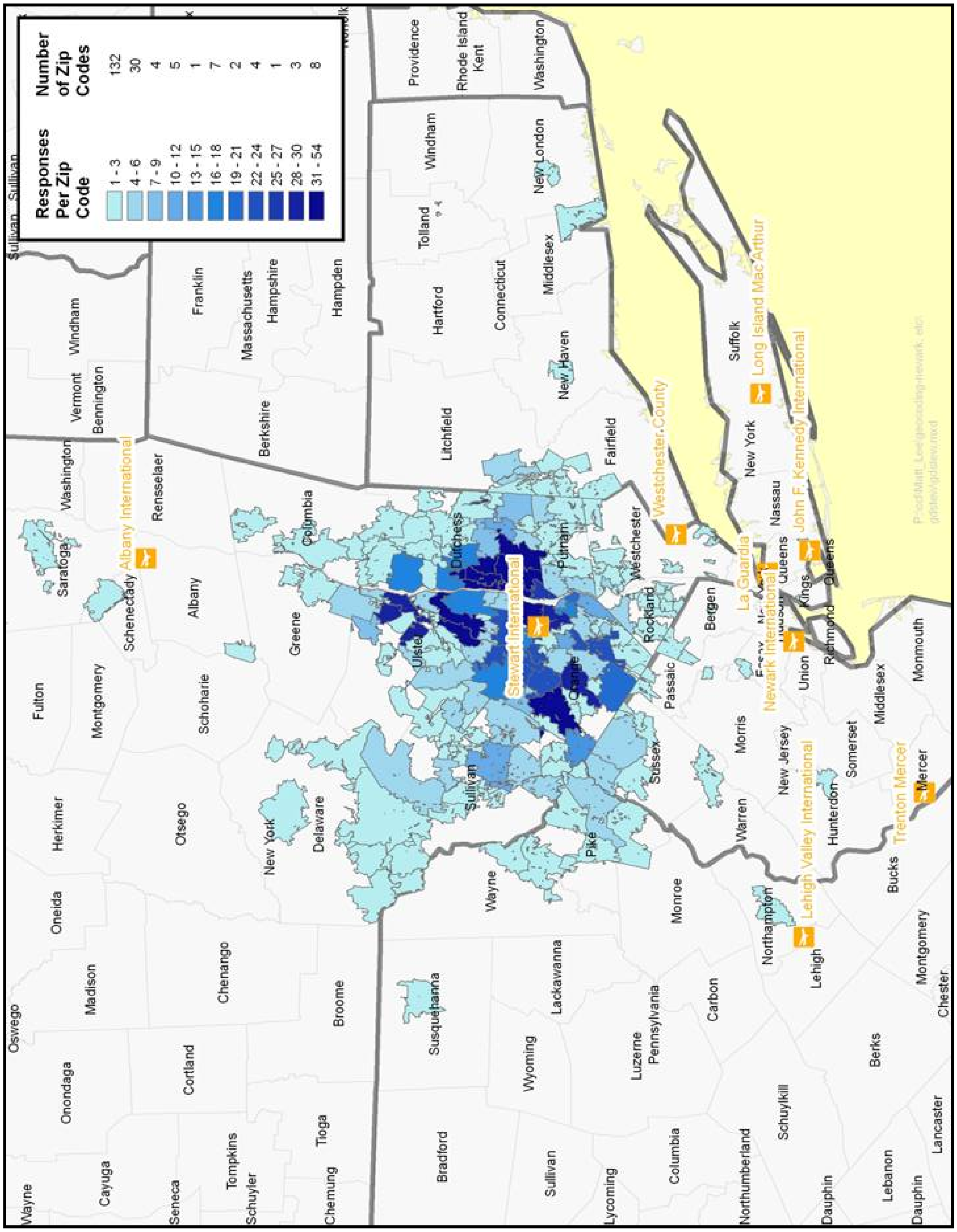
Exhibit I-2
DISTRIBUTION OF PASSENGER TRIP ORIGINS FOR ISP



Source: NYSDOT, 2005 Air Passenger Survey

Exhibit I-3 shows the distribution of surveys by zip code of passenger trip origin for SWF. Not surprisingly, the vast majority of surveys came from passengers for whom SWF is the closest airport. Approximately 78 percent of survey respondents were traveling for non-business reasons. Surveys were split evenly between residents and visitors.

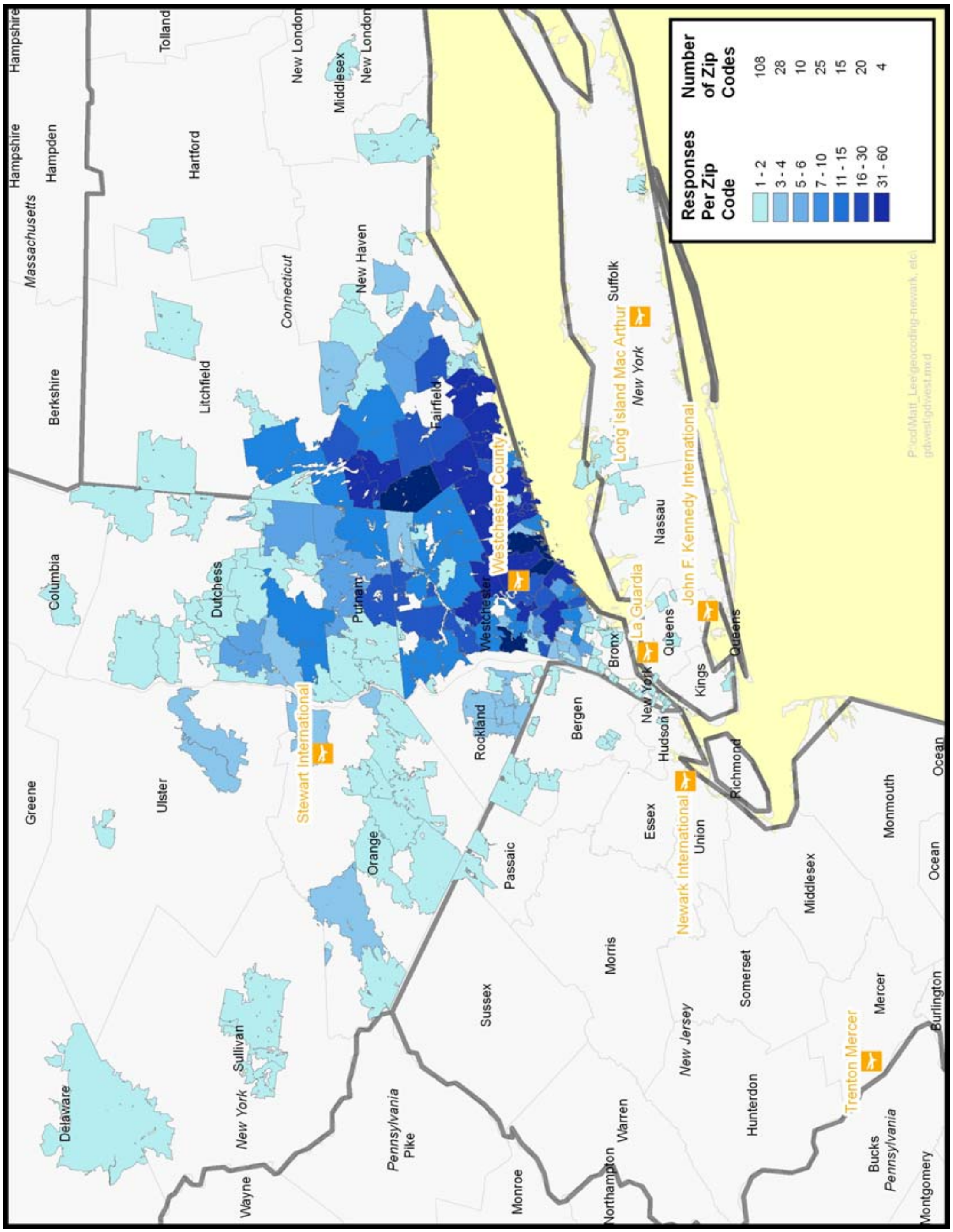
Exhibit I-3
DISTRIBUTION OF PASSENGER TRIP ORIGINS FOR SWF



Source: NYSDOT, 2005 Air Passenger Survey

Exhibit I-4 shows the distribution of surveys by zip code of passenger trip origin for HPN. The majority of surveys came from Fairfield (CT) and Westchester (NY) counties. Approximately 61 percent of survey respondents were traveling for non-business reasons. Surveys were split evenly between residents and visitors.

Exhibit I-4
DISTRIBUTION OF PASSENGER TRIP ORIGINS FOR HPN



Source: NYSDOT, 2005 Air Passenger Survey

I.2 IDENTIFICATION OF AIRPORT SERVICE AREAS

To identify the counties which comprise the service areas for each airport, the survey responses by zip code were summarized by county to determine the number of survey responses for each county. The number of surveys responses from each county was compared to the total county population to determine a rate of survey response per 1,000 residents. An empirically established level of significance was used to determine whether a county was part of the service area.

Each zip code was assigned to a county depending upon its location. Those zip code areas that spanned county boundaries were assigned to the county which had the larger portion of a zip code's area. The number of surveys was then tallied and compared to the county's 2004 population (as described by Woods & Poole Economics). A rate of surveys per 1,000 residents was established. Using a threshold of 0.05 surveys per 1,000 residents gave the best results for defining airport service areas that were composed of contiguous counties; and were reasonably consistent with past definitions.

The purpose of this analysis was to define those counties that should be included in the socio-economic model of each airport's service area. While a county may generate a noticeable number of trips to an airport, the airport may not necessarily be an important part of that county's air travel market. Including a large county that generates a small number of trips in an airport service area model would distort the overall airport model towards the socio-economic factors of a county that generates only a small number of trips.

Table I-2 presents the number of completed surveys by county and the per 1,000 local population ratio for ISP. Although New York County generated a significant number of surveys at ISP, when compared to the total population of the county, the number of surveys did not reach a threshold of significance. New York and Sullivan counties (shown in red) are included in the service area of one or more airports in the study.

Table I-2
SURVEYS PER 1,000 COUNTY POPULATION – ISP

COUNTY COUNT	COUNTY	STATE	ISP SURVEYS	SURVEYS PER 1000 POPULATION
1	Suffolk	NY	901	**0.6172**
2	Nassau	NY	157	**0.1170**
	New York	NY	67	0.0432
	Tioga	NY	1	0.0194
	Sullivan	NY	1	0.0133
	Ontario	NY	1	0.0098

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Sources: NYSDOT, 2005 Air Passenger Survey and Landrum & Brown analysis.

Table I-3 presents the number of completed surveys by county and the per 1,000 local population ratio for SWF. Although Westchester and Fairfield counties generated a significant number of surveys at SWF, when compared to the total population of each county, the number of surveys does not reach a threshold of significance. Susquehanna, Westchester, Litchfield, and Fairfield counties (shown in red) are included in the service area of one or more airports in the study.

Table I-3
SURVEYS PER 1,000 COUNTY POPULATION – SWF

COUNTY COUNT	COUNTY	STATE	SWF SURVEYS	SURVEYS PER 1000 POPULATION
1	Dutchess	NY	391	**1.3514**
2	Orange	NY	452	**1.2635**
3	Ulster	NY	202	**1.1222**
4	Sullivan	NY	70	**0.9316**
5	Putnam	NY	22	**0.2207**
6	Delaware	NY	10	**0.2097**
7	Pike	PA	10	**0.2000**
8	Sussex	NJ	16	**0.1072**
9	Rockland	NY	18	**0.0615**
	Columbia	NY	3	0.0474
	Wayne	PA	2	0.0391
	Susquehanna	PA	1	0.0236
	Westchester	NY	22	0.0234
	Litchfield	CT	4	0.0215
	Greene	NY	1	0.0205
	Fairfield	CT	10	0.0112

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Sources: NYSDOT, 2005 Air Passenger Survey and Landrum & Brown analysis.

Table I-4 presents the number of completed surveys by county and the per 1,000 local population ratio for HPN. New Haven County generated a significant number of surveys at HPN. However, when compared to the total population of the county, the number of surveys does not reach a threshold of significance. Sullivan, Ulster, Delaware, and New Haven counties (shown in red) are included in the service area of one or more airports in the study.

Table I-4
SURVEYS PER 1,000 COUNTY POPULATION – HPN

COUNTY COUNT	COUNTY	STATE	HPN SURVEYS	SURVEYS PER 1000 POPULATION
1	Fairfield	CT	512	**0.5719**
2	Westchester	NY	511	**0.5444**
3	Putnam	NY	36	**0.3612**
4	Dutchess	NY	51	**0.1763**
5	Rockland	NY	24	**0.0820**
6	Litchfield	CT	15	**0.0807**
7	Orange	NY	19	**0.0531**
	Sullivan	NY	3	0.0399
	Ulster	NY	5	0.0278
	Delaware	NY	1	0.0210
	Cortland	NY	1	0.0207
	New Haven	CT	17	0.0205
	Washington	NY	1	0.0163

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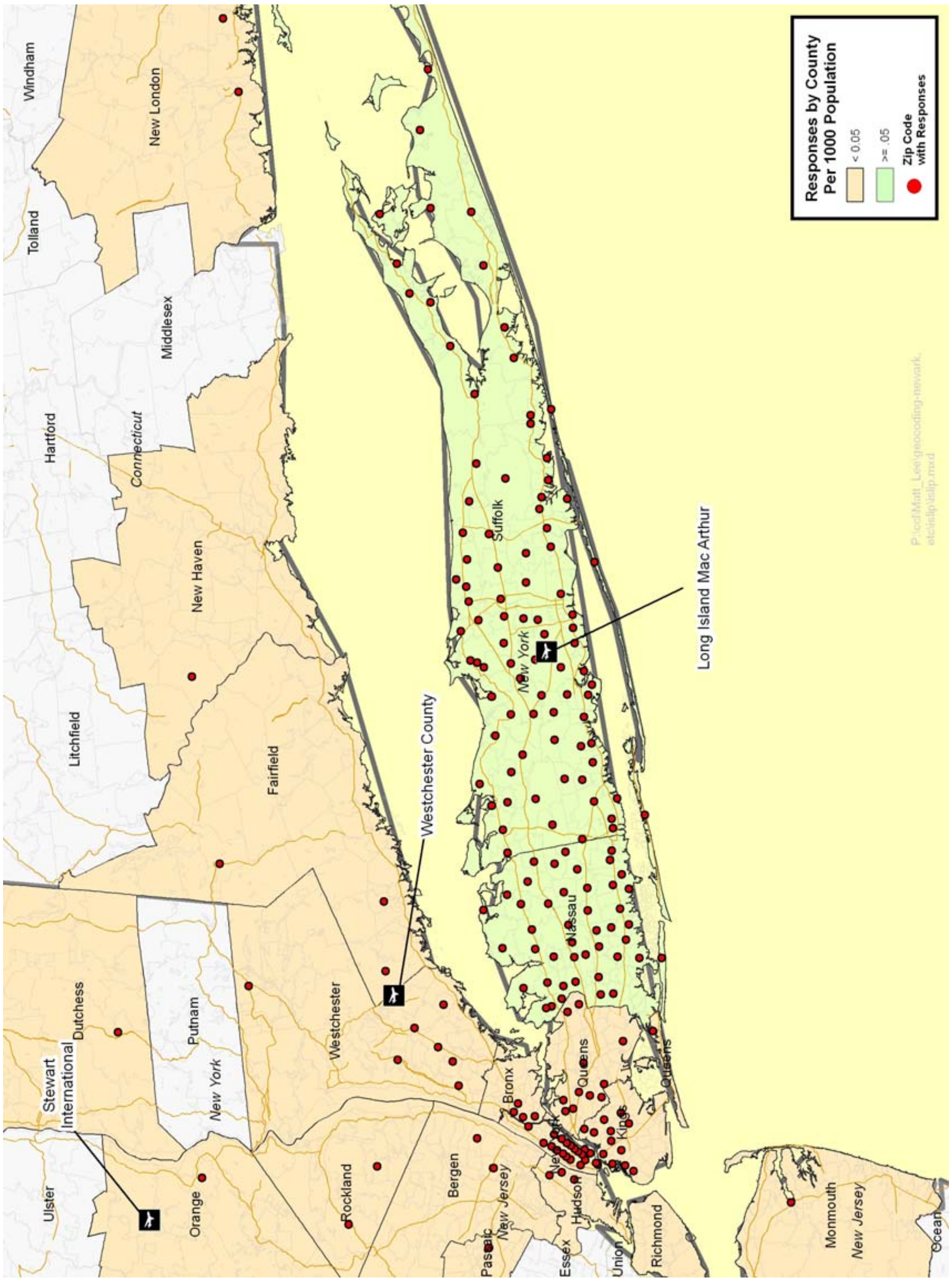
Sources: NYSDOT, 2005 Air Passenger Survey and Landrum & Brown analysis.

Exhibit I-5 shows the resulting service area for ISP. The ISP service area includes Nassau and Suffolk counties on Long Island.

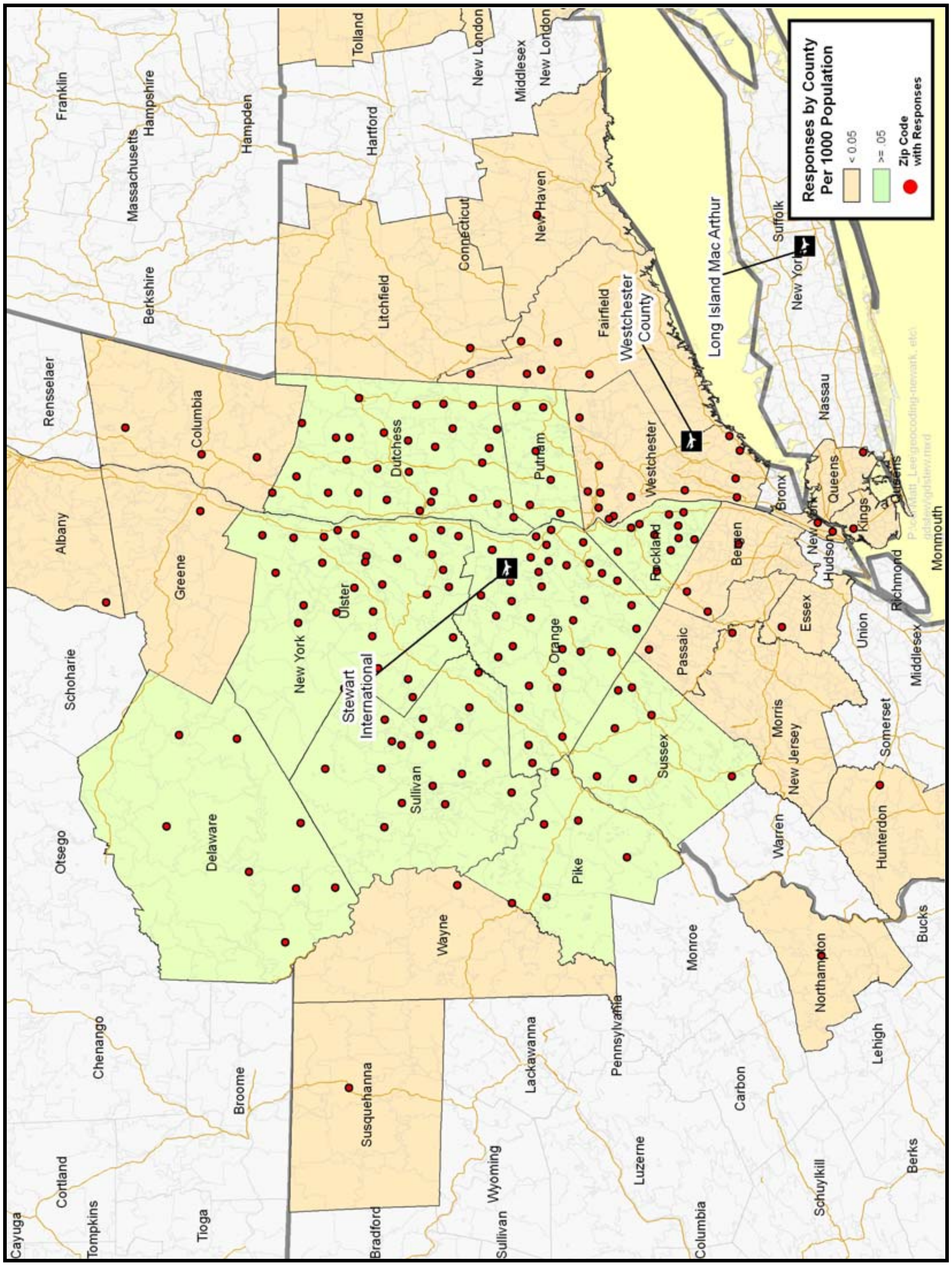
Exhibit I-5
ISP SERVICE AREA



Source: NYSDOT, 2005 Air Passenger Survey

Exhibit I-6 shows the resulting service area for SWF. The SWF service area includes Pike County in Pennsylvania, and Delaware, Dutchess, Orange, Putnam, Rockland, Sullivan, Sussex, and Ulster counties in New York.

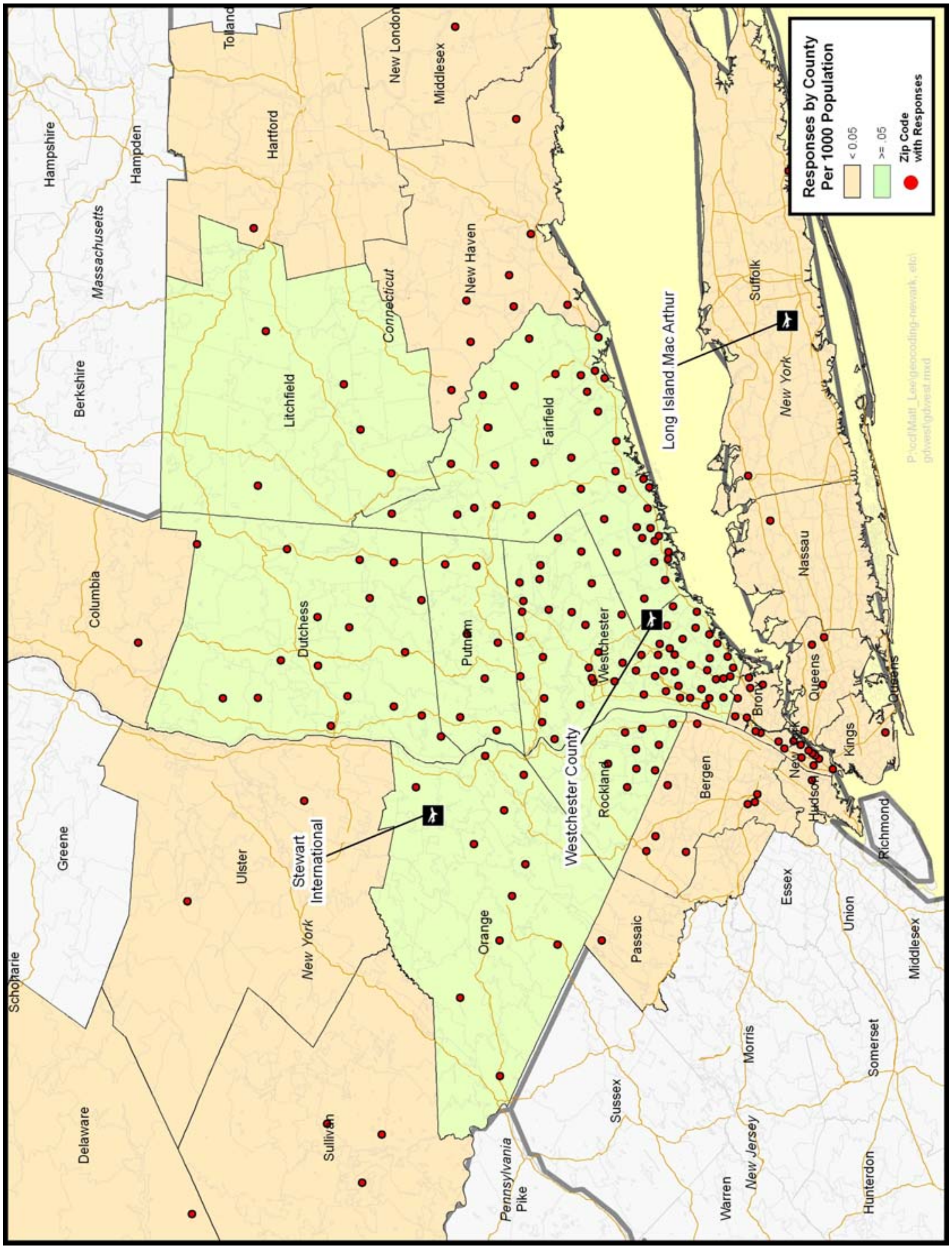
Exhibit I-6
SWF SERVICE AREA



Source: NYSDOT, 2005 Passenger Survey

Exhibit I-7 shows the resulting service area for HPN. The HPN service area includes Fairfield and Litchfield counties in Connecticut, and Dutchess, Orange, Putnam, Rockland, and Westchester Counties in New York.

Exhibit I-7
HPN SERVICE AREA



Source: NYSDOT 2005 Air Passenger Survey
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II. IMPACT FACTORS

Forecasting future aviation activity by nature is not an exact science. Many factors impact future trends in aviation activity. The most influential of these "impact factors" are summarized below:

- **Low Cost Carriers** – When low cost carriers (LCCs) enter air markets, prices tend to decline and travel (especially leisure travel) increases. LCCs have significant market share at ISP and operate at all three NYSDOT airports. These forecasts assume that market share for LCCs will increase at all three airports and that the availability of facilities such as gates are not a constraint to growth.
- **Changes to Access Regulations at LGA, JFK and EWR** – Currently, hourly operations by commercial aircraft at LGA are limited to 75 per hour. While the current rule under FAR Part 93 is expected to expire at the end of 2006, the FAA is expected to make a replacement rule. Thus, the 75 operations per hour cap on commercial operations is expected to continue throughout the forecast. Similarly, operational limits imposed by FAR Part 93 at JFK will expire at the end of 2006. This forecast assumes that the FAA lets the current rule expire and will not impose new limits at JFK. While FAR Part 93 was originally designed to regulate demand at EWR, these provisions were only implemented for a short time. They have not been in effect for over 30 years. This forecast assumes that no new rule would be in effect at EWR.
- **Changes to Access Regulations at HPN** – Currently, half-hourly operations at HPN are limited to four operations by commercial passenger carriers. This previously voluntary limit was converted to legislation in September 2004. This forecast assumes that past levels of compliance with the caps on operations and passengers will continue into the future.
- **Fuel Prices –** The price of aviation fuel has risen dramatically over the past two years. Peak prices for crude oil in 2005 and 2006 were above $70 per barrel. Higher fuel prices should result in higher fares and subsequently lower passenger demand. This forecast assumes that high fuel prices (greater than $60 per barrel) are now a permanent part of the aviation market.
- **Airline Bankruptcies –** The past five years have witnessed dramatic changes to the overall financial health of the airline industry, with four "legacy" airlines entering bankruptcy at least once. Continued operation of an airline during bankruptcy tends to depress pricing and stimulate demand. After bankruptcy, pricing tends to stabilize (often at a higher level), which would reduce passenger travel. Of the carriers still operating under bankruptcy protection as of this writing, none are a major presence at any of the NYSDOT airports. This forecast assumes that the "legacy" airlines will weather current financial problems that thrust them into bankruptcy and will emerge as lower cost competitors. This forecast also assumes that jetBlue will successfully make the transition from being a small regional airline to a large national carrier.

- **The Effect of Economic Upturns and Downturns –** Air travel varies with the health of the economy. With the advent of low-cost carriers, more travel has become discretionary (leisure) and therefore more likely to vary with levels of disposable income. This forecast describes long-term trends and does not forecast variations due to short-term economic spurts and recessions. These short-term events produce variability around the long-term trends identified in the forecast. History has shown that air travel tends to recover after short-term economic and political events.
- **Effects of the Attacks of September 11, 2001 -- Real Decline in Short-Haul Travel** – The net effect of the attacks of September 11, 2001 was to increase real travel times for air transportation by approximately 30 minutes. This has had the net effect of reducing demand for short-haul (less than 500 miles). This forecast assumes that the travel time increase is largely permanent and that the current demand profile for short-haul travel will continue.
- **Perceived Effects of the Attacks of September 11, 2001 – Declining Yields for Long-Haul Travel** – With the decline in short-haul travel, airlines, especially low cost carriers have shifted their capacity into longer-haul flights. As a result, fares and yields for long-haul travel have declined. This forecast assumes that these changes are largely permanent, although some small market corrections will occur.
- **Perceived Effects of the Attacks of September 11, 2001 – Air cargo industry** – The volume of air cargo carried on passenger airlines has declined in response to reductions in cargo capacity available and new air cargo security rules. This forecast assumes that emerging trends for air cargo security continue. The only one of the NYSDOT study airports with significant air cargo tonnage is SWF. Almost all of the SWF cargo is carried on freighters.
- **Airline Industry Outlook –** The ability to pass on higher fuel prices as fare increases and the improvement of "legacy" carrier cost structures during bankruptcy protection will improve airline economics on a go forward basis. For this forecast, it is assumed that:

  – The industry will continue to replace smaller regional jet aircraft with larger regional jet aircraft that have lower operating costs per passenger mile.
  – More narrow-body aircraft will continue to enter the fleet
  – Narrow-body aircraft will largely be the same size as the existing fleet
  – The overall financial health of the industry will improve with increasing fares. However, real fare levels are not likely to increase to year 2000 levels

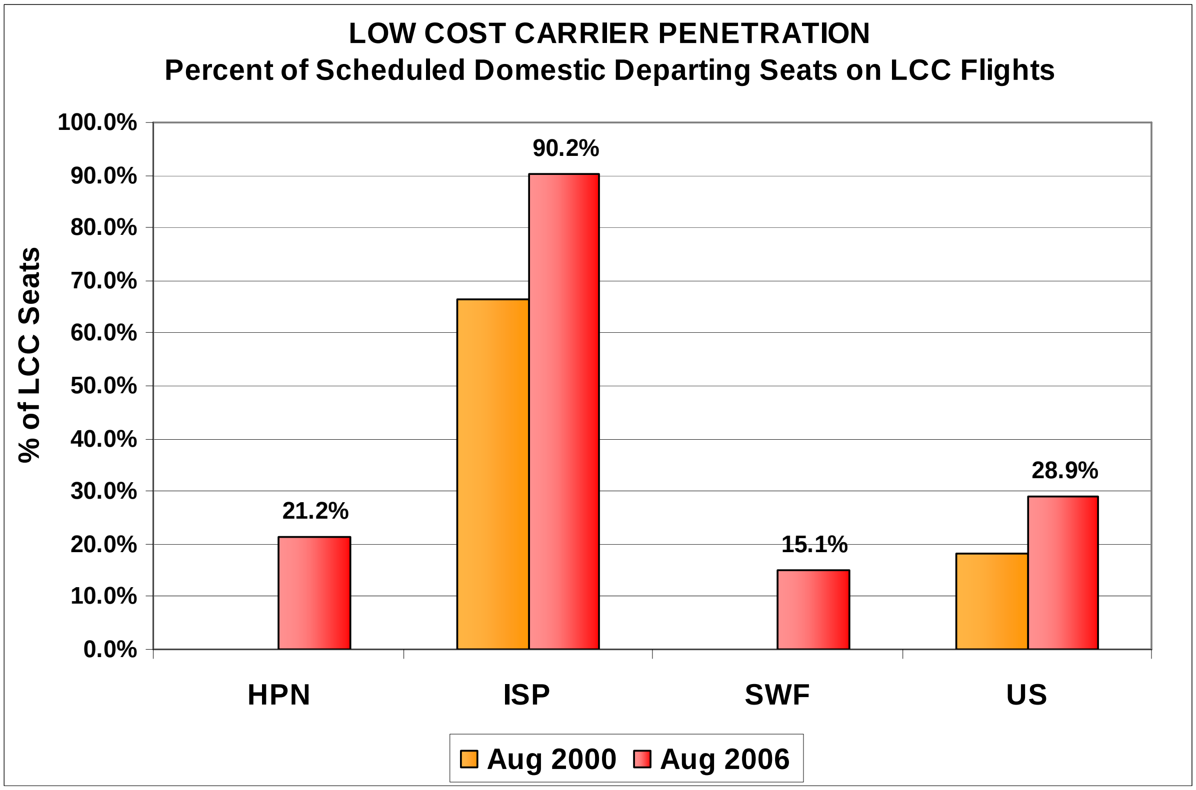
- **Effect of Airside Congestion –** Airside congestion reduces the service reliability of air transportation, making it a less attractive air transportation choice for short-haul (less than 500 miles) travel. This forecast assumes that airside congestion will have no effect on air travel demand (unconstrained forecast).

- **Effect of Ground Transportation Congestion –** The passenger surveys demonstrated that travel time to the airport, especially from home, is an important factor for airport choice. Given equal air service quality and similar pricing, passengers will usually choose the closer airport. This forecast assumes an unconstrained case where levels of ground transportation congestion remain at current levels and do not change current airport choice patterns.
- **Leakage of Air Travel Demand to Other Airports –** The air passenger surveys have demonstrated that passengers do consider and use alternate airports for various trips. This forecast assumes that current propensity to use alternate airports will continue over time. The independent socio-economic variables reflect current forecasts for unequal growth on a county by county basis. The dependent variables of forecast passenger travel at each airport will naturally reflect the unique demographic characteristics of each airport's service area.

II.1 LOW COST CARRIERS

Since deregulation of the airlines in 1978, LCCs have continuously increased their presence in the national market. As shown in **Exhibit II-1**, in August of 2006, LCCs made up nearly 29 percent of the national travel market. By contrast, LCCs comprised only 21.2 percent of the departing seats in August 2006 at HPN and 15.1 percent at SWF. ISP enjoys a well-above average LCC market share at 90.2 percent.

Exhibit II-1
LCC MARKET PRESENCE



Sources: Official Airline Guide and Landrum & Brown analysis
Note: Data for U.S. LCC share in 2000 is based on the month of January.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\[NYSDOT LCC Comp vs US Benchmark_OAG.xls]Graphs

II.2 CHANGES IN ACCESS REGULATIONS AT LGA, JFK AND EWR

FAR Part 93 was originally imposed in 1968 by the FAA to control airline access to LGA, JFK and EWR, as well as Washington National (DCA) and Chicago O'Hare (ORD). This rule subsequently has been modified several times, changing operational levels, the regulated hours, or types of commercial and general aviation operations effected. Shortly after its imposition, the rule was eliminated entirely at EWR and was not replaced. In 2000, Congress passed the AIR-21 legislation which called for easing of restrictions and for the elimination of the rule entirely by the end of 2006.

In addition, AIR-21 authorized an unlimited number of new slots at LGA for operation of air service to small and non-hub communities with aircraft that have less than 70 seats. In response, airlines schedule 300 new operations to LGA and indicated intent to introduce even more new service. Flight delays dramatically increased to the point where LGA was responsible for a significant portion of delays in the entire national airspace system. The Port Authority requested that the FAA impose a limit on the number of new operations, and in response the FAA held a lottery that determined which airlines would receive 159 AIR-21 slots (chosen among the existing AIR-21 slot holders) and established a limit of 75 commercial operations per hour plus 6 slots per hour for non-scheduled and general aviation aircraft operations.

Future access regulations at LGA that replace current FAR Part 93 and AIR-21 slots are not anticipated to include limits on aircraft size. Further, they will likely eliminate any current limits on aircraft size. Thus, this forecast anticipates that airlines will have more ability to grow the size of aircraft used to serve a market in response to demand and serve all the demand it can serve while maintaining flight profitably. Thus, the continuation of a Federal constraint on aircraft traffic volume at LGA would not change the passenger demand at other regional airports.

Future growth in aircraft operations demand might trigger imposition of Federal demand management at JFK and EWR airports. Peak period aircraft delay levels at both airports are already at high levels. Further increases in demand will likely increase these delay levels further.

Current demand at EWR is over 40 percent regional jet aircraft, predominantly operated by one carrier. Over time and with growth of domestic air markets, this carrier has the diversity of domestic fleet to replace these RJ aircraft with larger narrow-body aircraft. Thus, it is reasonable to assume that the long-range forecast of passenger demand at EWR could be served within existing levels of annual operations, but with larger aircraft. Thus, a Federal constraint on aircraft traffic volume at EWR would not materially change the passenger demand at other regional airports.

Current demand at JFK is over 20 percent regional jet aircraft. In addition, virtually all domestic service is by narrow-body aircraft. International service is a mix of narrow-body, small wide-body (B767) and larger wide-body aircraft. Similar to EWR it is reasonable to assume that the long-range forecast of passenger demand could be served within existing levels of annual operations, but with larger aircraft. Thus, a Federal constraint on aircraft traffic volume at JFK would not materially change the passenger demand at other regional airports.

The changes to Federal access rules do not affect the Port Authority perimeter rule for LGA, which limits service from LGA to destinations within 1,500 miles (plus Denver, which had service when the rule was initially imposed). With the advent of the B-757 and B-767 aircraft, the relatively short length of LGA runways no longer limited the markets that could be served from LGA using jet aircraft. The Port Authority imposed the perimeter rule to maintain the diversity of short-haul markets from LGA. Long-haul markets have equivalent access to the New York market through JFK. The 2005 passenger surveys for LGA and JFK confirm that the entirety of the LGA service area lies within the JFK service area. The Port Authority does not anticipate changing the perimeter rule and this forecast assumes that the perimeter rule will stay in place. Any potential changes to the perimeter rule only affect the distribution of activity between JFK and LGA and do not materially affect demand levels at other regional airports.

II.3 CHANGES IN ACCESS REGULATIONS AT HPN

Westchester County imposed restrictions on the number of commercial flights at Westchester County Airport in September 2004 that formalized voluntary restrictions in place since 1984. County Executive Andy Spano said "It means these traditional protections for the communities around the airport will now be part of the laws of Westchester County. They will now have permanence." He added, "This is an important element of the 'Good Neighbor Policy' for the airport, which balances the needs of the flying public with the rights of people who live near the airport."

The new legislation provides the following:

- A maximum of four scheduled commercial aircraft may enplane or deplane per half hour,
- On average, there may not be more than 240 scheduled passengers per half hour (either arriving or departing),
- Continuation of the lottery allocation system for flights, to determine what airline can use the airport at what time, and
- County control of ramp operations.

These restrictions are similar to what has been in effect by contract at the airport since 1984. Over the years, the airlines agreed to periodic extensions of the restrictions. With the latest extension set to expire December 31, 2004, Spano initiated an effort to codify the restrictions, to make it less likely the restrictions can ever be successfully challenged.

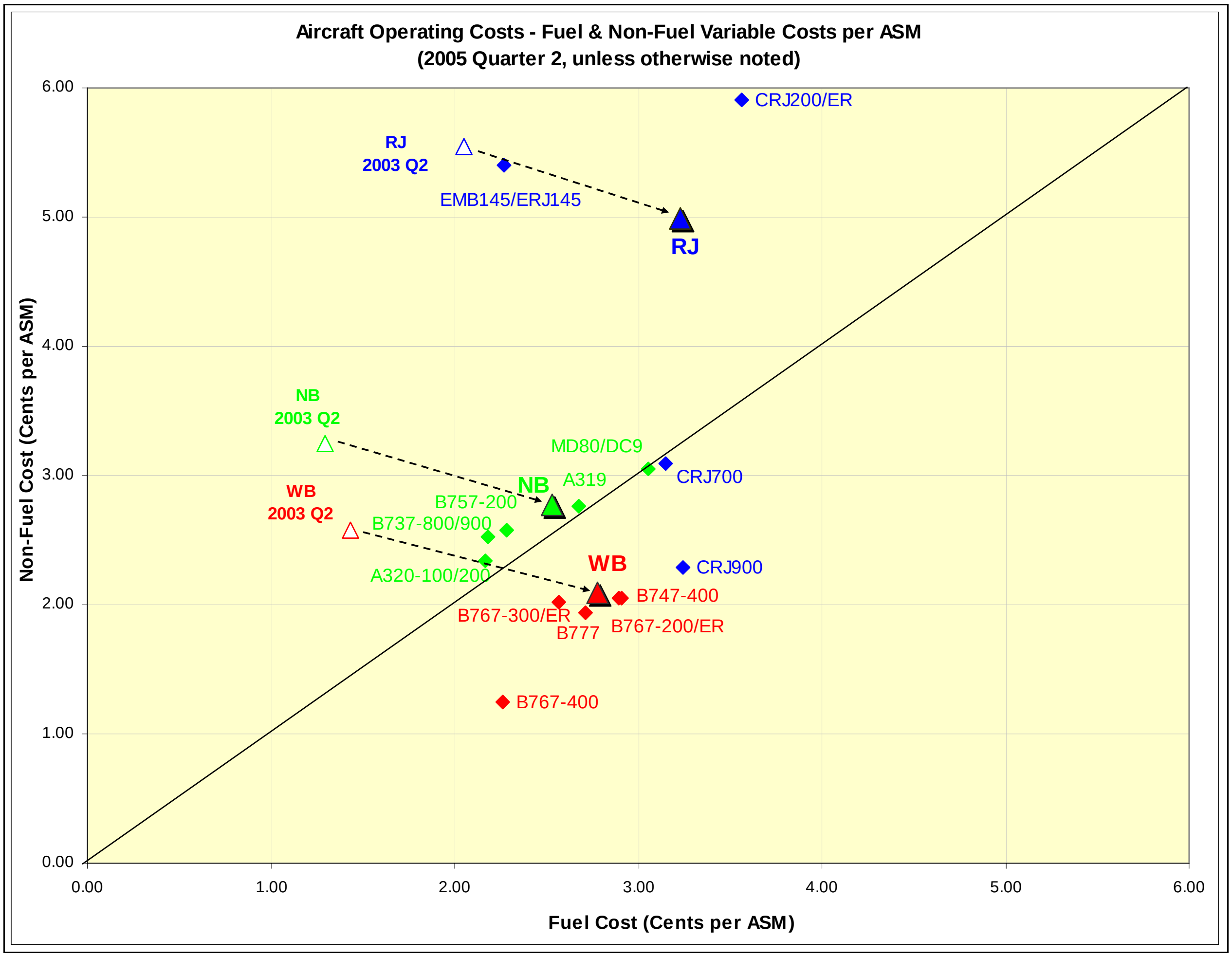
II.4 FUEL PRICES

The dramatic rise of fuel prices in 2005 has changed the economics of the aviation industry. Two carriers (Delta Air Lines and Northwest Airlines) declared bankruptcy as a direct result of initial weak financial positions and subsequent increases in fuel prices. Other established airlines increased their losses. Previously profitable LCCs began posting losses as well.

Higher fuel prices increase the cost per passenger mile of providing air service. Over the past four years, airlines have faced declining revenue per passenger mile (yield), primarily as a result of increased competition from new LCCs. They had responded by cutting labor and other non-fuel costs. However, recent fuel cost increases more than offset these other cost savings.

Exhibit II-2 compares the fleet average non-fuel (y-axis) and fuel (x-axis) costs per passenger mile for regional jet, narrow-body and wide-body aircraft types. Values for 2003 and 2005 are shown. Overall, fuel cost per passenger mile doubled from 2003 to 2005. Regional jet aircraft have fuel costs that are approximately 10 to 20 percent more per passenger mile than narrow-body aircraft. In addition, regional jet aircraft have labor costs per passenger mile that are more than 60 percent greater than those for narrow-body aircraft.

Exhibit II-2
COMPARISON OF FUEL AND NON-FUEL AIRCRAFT OPERATING COSTS



Sources: US DOT Form 41 and Landrum & Brown analysis

The industry has responded relatively quickly. Northwest Airlines took advantage of bankruptcy and cancelled various flying contracts with Mesaba Airlines for smaller aircraft. Comair (Delta owned commuter carrier) has parked 30 regional jet aircraft. The Independence Air bankruptcy idled a large regional jet fleet. Further cuts in regional jet operations are likely if high fuel prices continue. Simply put, yields on regional jet markets are too low to support their operation. The industry is likely to respond with less frequent service with larger, more efficient aircraft.

This forecast assumes that high fuel prices are now a permanent part of the aviation market. This will result in airlines choosing larger, more efficient aircraft.

In addition, with some recently announced capacity cuts, airlines should be able to more easily raise prices to cover increased fuel costs.

II.5 AIRLINE BANKRUPTCIES

While fuel costs have driven the latest round of airline bankruptcies, other, earlier bankruptcies have had a variety of causes. Major airlines have had to use bankruptcy protection to overhaul archaic labor contracts, cut fleet size, and restructure defined benefit retirement programs. This process is not yet complete, although major carriers have cost structures that are far more similar to newer LCCs.

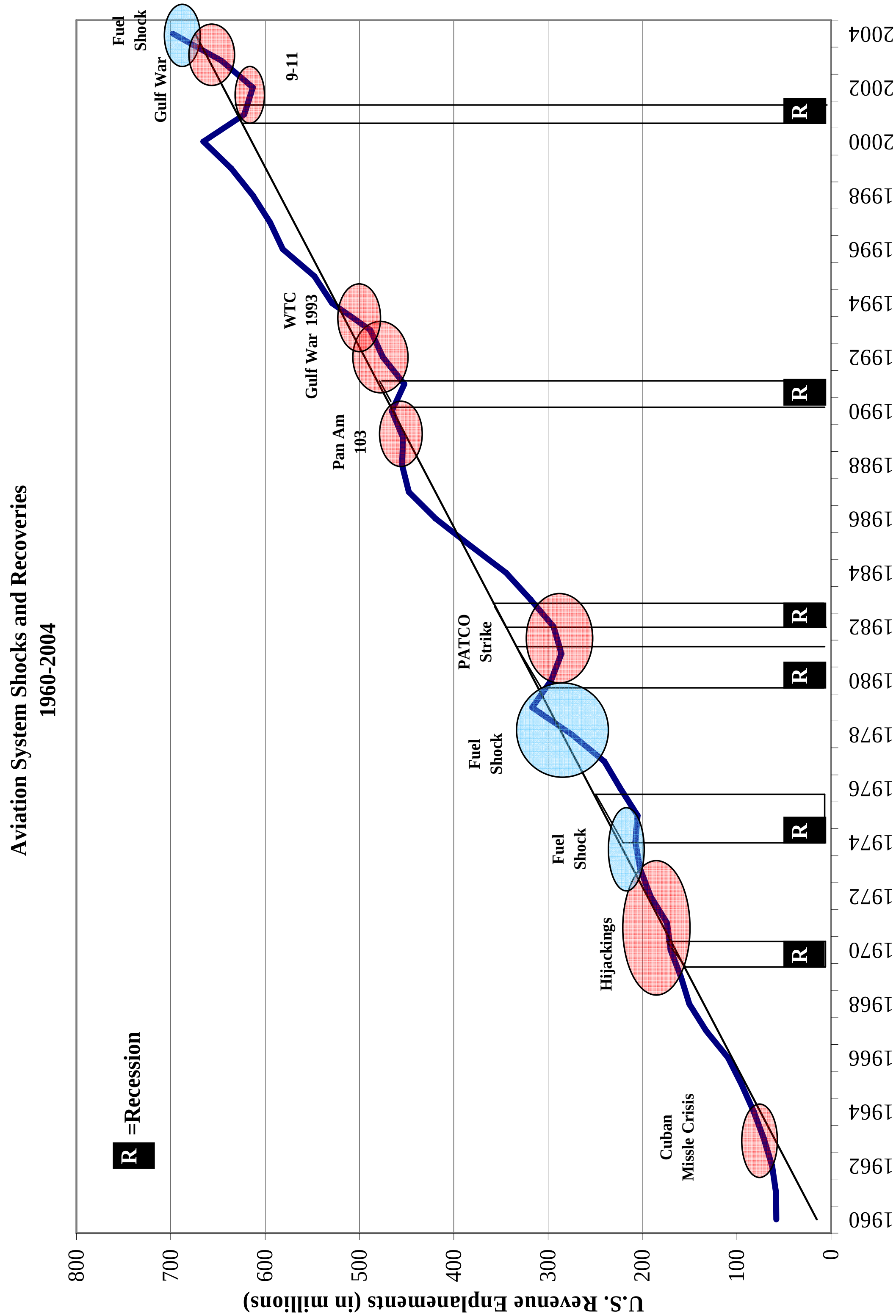
Far more start-up low cost carriers fail than succeed. Many fail because of a faulty business concept, or have bad timing with a sound business concept. Independence Air is the most recent example of bad timing, starting with an regional jet based business plan, just prior to the price of fuel increasing to the point where regional jet aircraft became unprofitable. They then entered the already highly competitive long-haul market when yields had already declined 40 percent.

Other start-up low cost carriers fail when they make the transition from being a small airline with a single mission or focus city, to being a large airline with multiple missions and focus cities. Peoples Express is perhaps the most noteworthy past example of such a failure. Midway Airlines also failed in a similar manner. Small and light management overhead cannot manage a large complex airline. JetBlue is currently making the transition from being a small start-up airline to a large network carrier. They are currently in the highest risk part of their growth, where new management systems are being implemented at a far higher cost than the simpler systems they replaced. Their key to success will be keeping unit costs low enough to sustain their price advantage over other airlines.

II.6 EFFECTS OF ECONOMIC UPTURNS AND DOWNTURNS

Use of aviation for travel varies somewhat with the economy. As shown in **Exhibit II-3**, aviation travel has declined during many recessions and bounced back during subsequent economic expansions. The overall 45-year trend has been relatively constant. As more and more air travel is for discretionary (leisure) purposes, the variability of air travel with economic cycles should increase. Historically, the level of business travel (measured by passenger counts) has been relatively stable. Exhibit II-3 also shows that air travel has been relatively resilient in weathering fuel-price shocks and terrorist attacks. This forecast focuses on long-term trends. Short-term perturbations should be expected around the underlying trend.

Exhibit II-3
AVIATION INDUSTRY SHOCKS AND RECOVERIES



Source: Landrum & Brown analysis

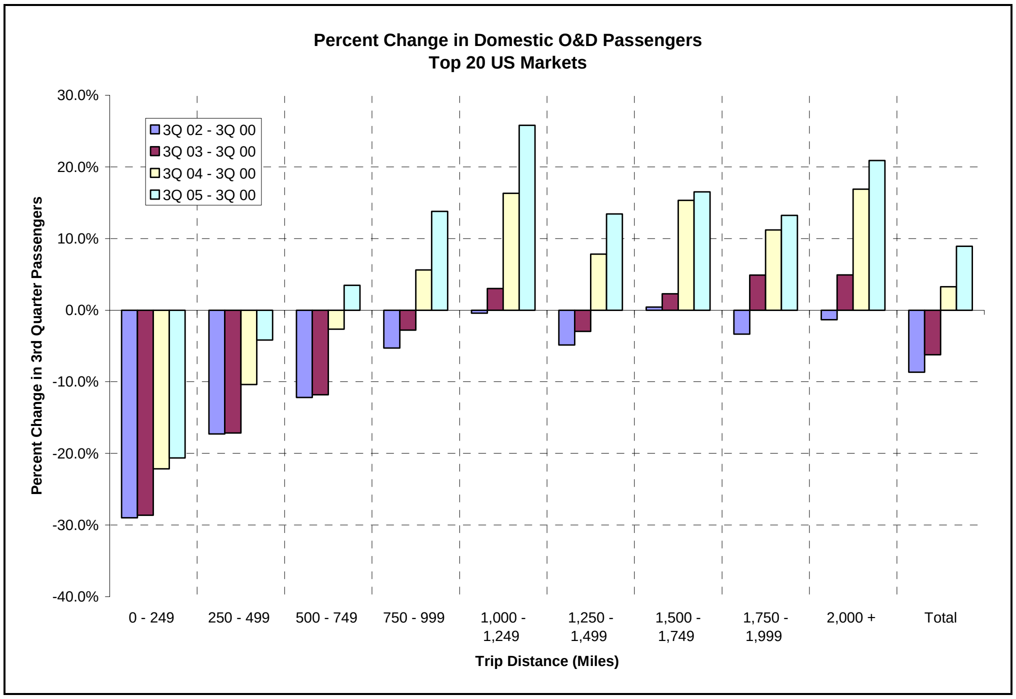
II.7 EFFECTS OF THE ATTACKS OF SEPTEMBER 11, 2001 -- REAL DECLINE IN SHORT-HAUL TRAVEL

The initial thoughts that fear of travel would drive passengers away from air travel have proven to be largely unfounded. However, changes to security procedures have changed travel habits since they have increased the perceived time required to travel through the airport by approximately 30 minutes. Post 9-11 security has added a considerable hassle factor to air travel which has caused an increasing number of potential air travelers to seek alternatives. The decision to drive rather than fly has disproportionately affected travel in short-haul markets, as driving becomes an increasingly viable alternative the shorter the trip length. On longer trips, the 30 minute time increase is far less noticeable since other modes do not provide a comparable travel time option. Non-hub airports have been particularly affected as the majority of flights from these airports historically have been 500 miles or less, connecting the airports to a legacy carriers' hub airport. A total of 41 non-hub airports in the continental U.S. lost all scheduled passenger service between April 2000 and April 2006.

Exhibit II-4 shows the change in demand by travel distance from the top 20 U.S. markets compared to the 3rd quarter 2000. Initially (4th Quarter 2001), all markets declined. However by 2004, only the decline in short-haul travel, especially travel of less than 500 miles remained. By 3rd quarter 2005, travel longer than 500 rebounded to levels above those shown in 2000.

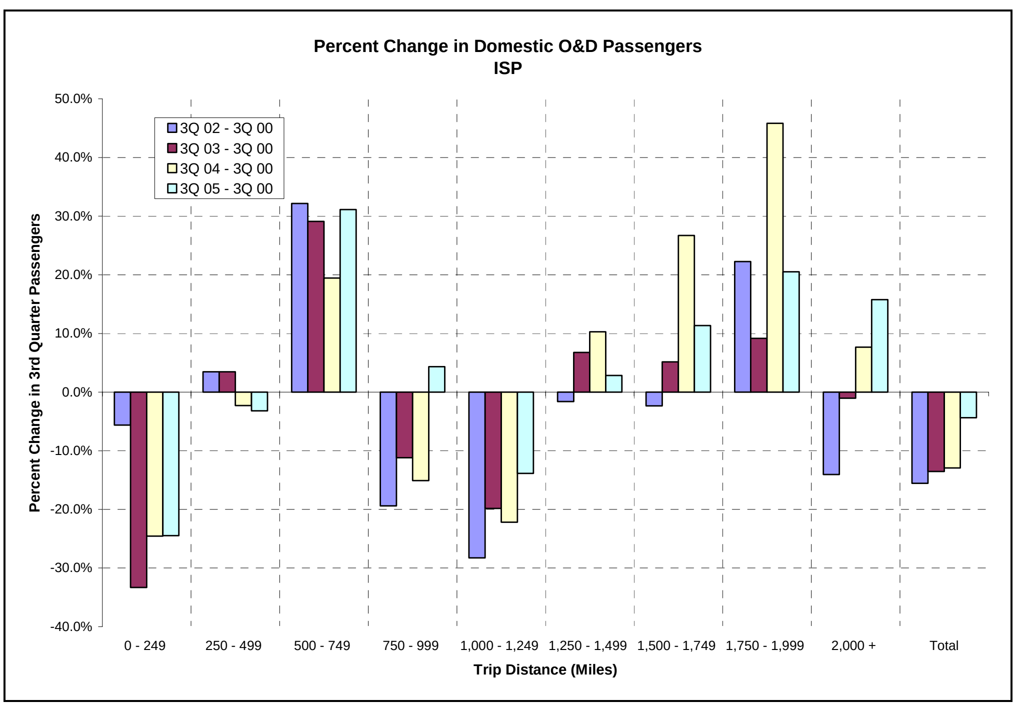
Exhibits II-5 through **II-7** show the comparative change in travel demand by mileage band for ISP, SWF, and HPN, respectively.

Exhibit II-4
ANNUAL CHANGE IN TRAVEL BY LENGTH OF TRIP – TOP 20 U.S. MARKETS



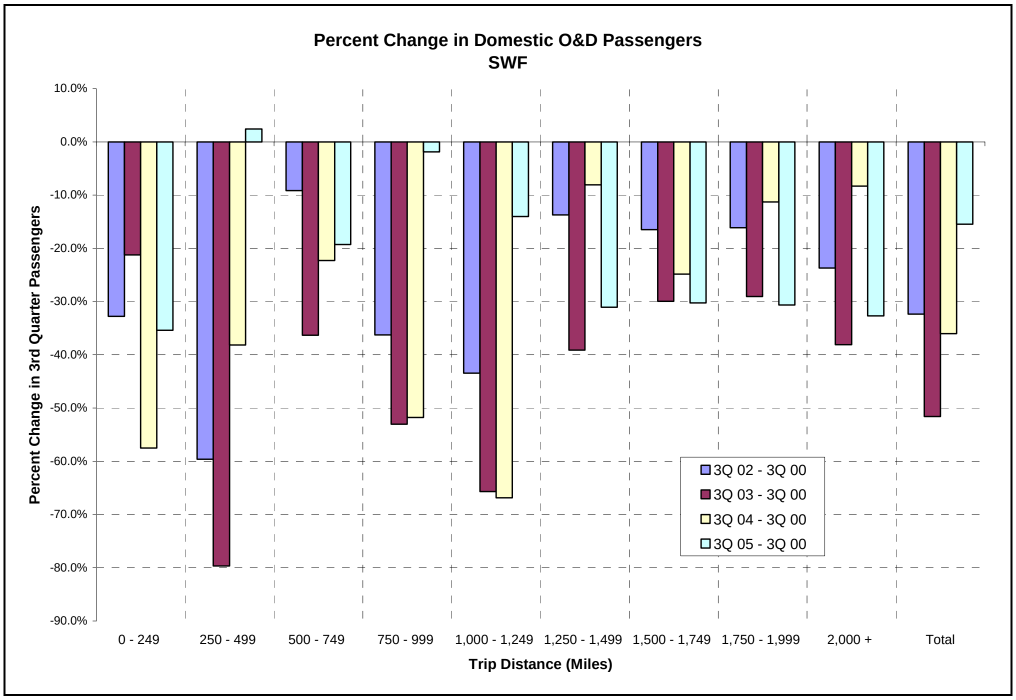
Sources: US DOT T-100 Data and Landrum & Brown analysis

Exhibit II-5
ANNUAL CHANGE IN TRAVEL BY LENGTH OF TRIP - ISP



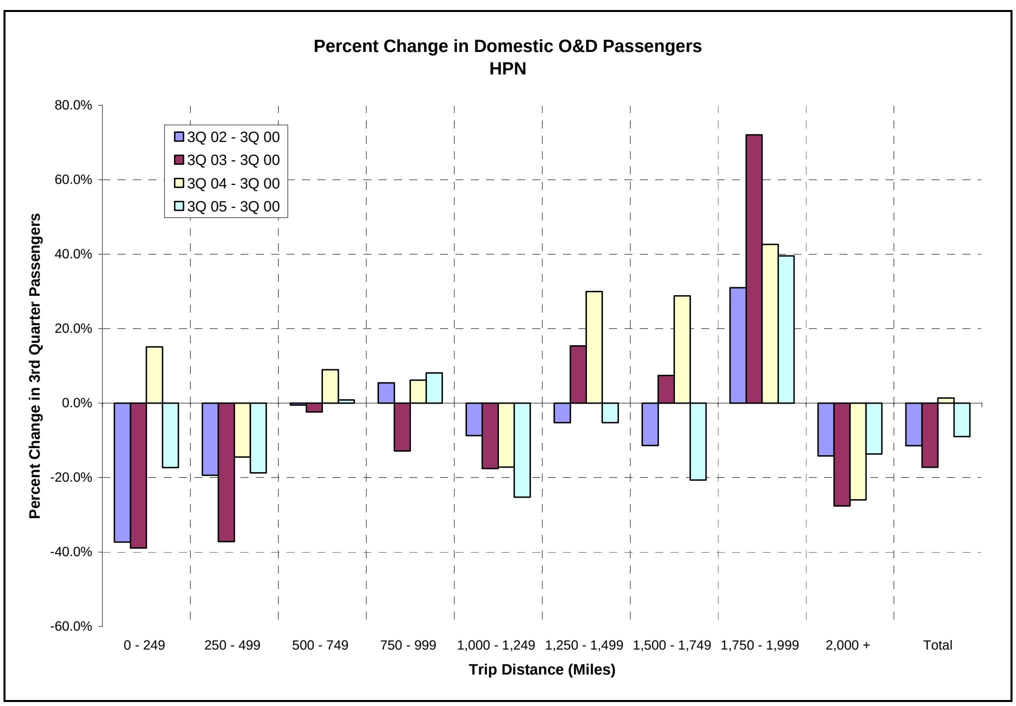
Sources: US DOT T-100 Data and Landrum & Brown analysis

Exhibit II-6
ANNUAL CHANGE IN TRAVEL BY LENGTH OF TRIP - SWF



Sources: US DOT T-100 Data and Landrum & Brown analysis

Exhibit II-7
ANNUAL CHANGE IN TRAVEL BY LENGTH OF TRIP - HPN

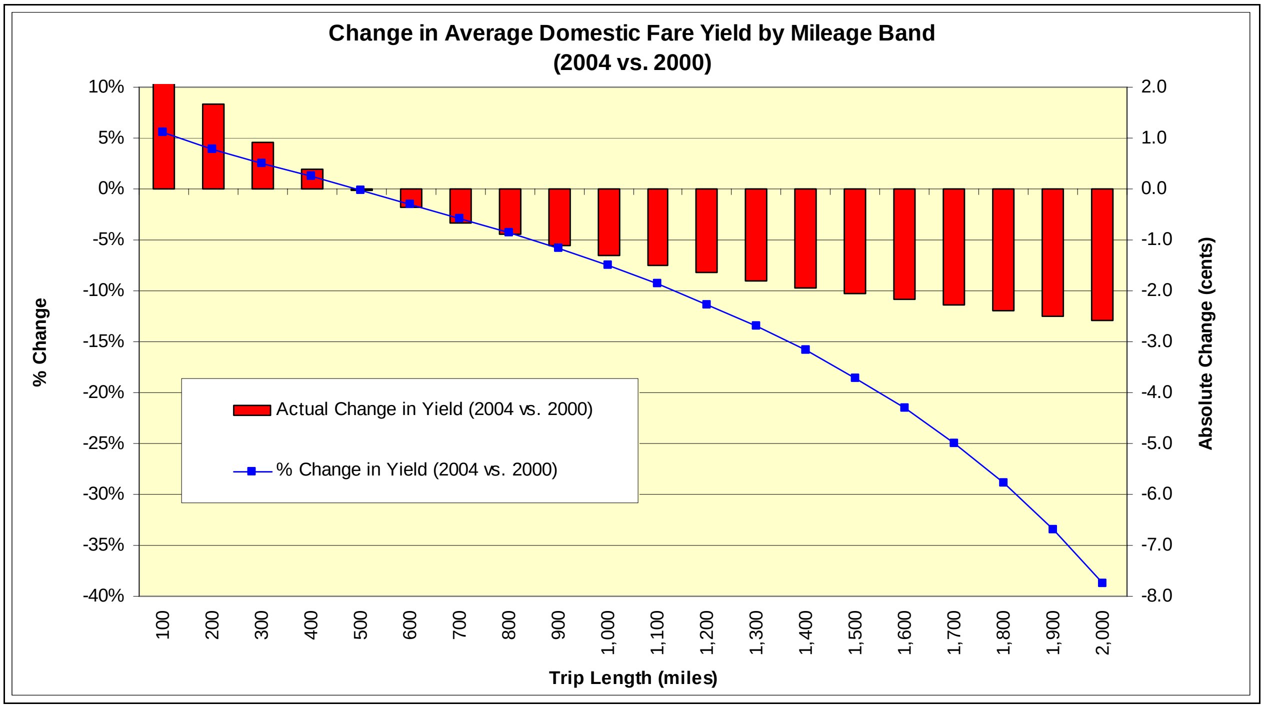


Sources: US DOT T-100 Data and Landrum & Brown analysis

II.8 PERCEIVED EFFECTS OF THE ATTACKS OF SEPTEMBER 11, 2001 - DECLINING YIELDS FOR LONG-HAUL TRAVEL

With the decline in short-haul travel, airlines, especially low cost carriers have shifted their capacity into longer-haul flights. In addition, the start-up of JetBlue at New York's Kennedy focused on long-haul flights. These two factors have caused yields to decline on long-haul flights. As shown in **Exhibit II-8**, yields for long-haul flights have declined by as much as 40 percent in the past five years.

Exhibit II-8
YIELD TRENDS BY LENGTH OF HAUL



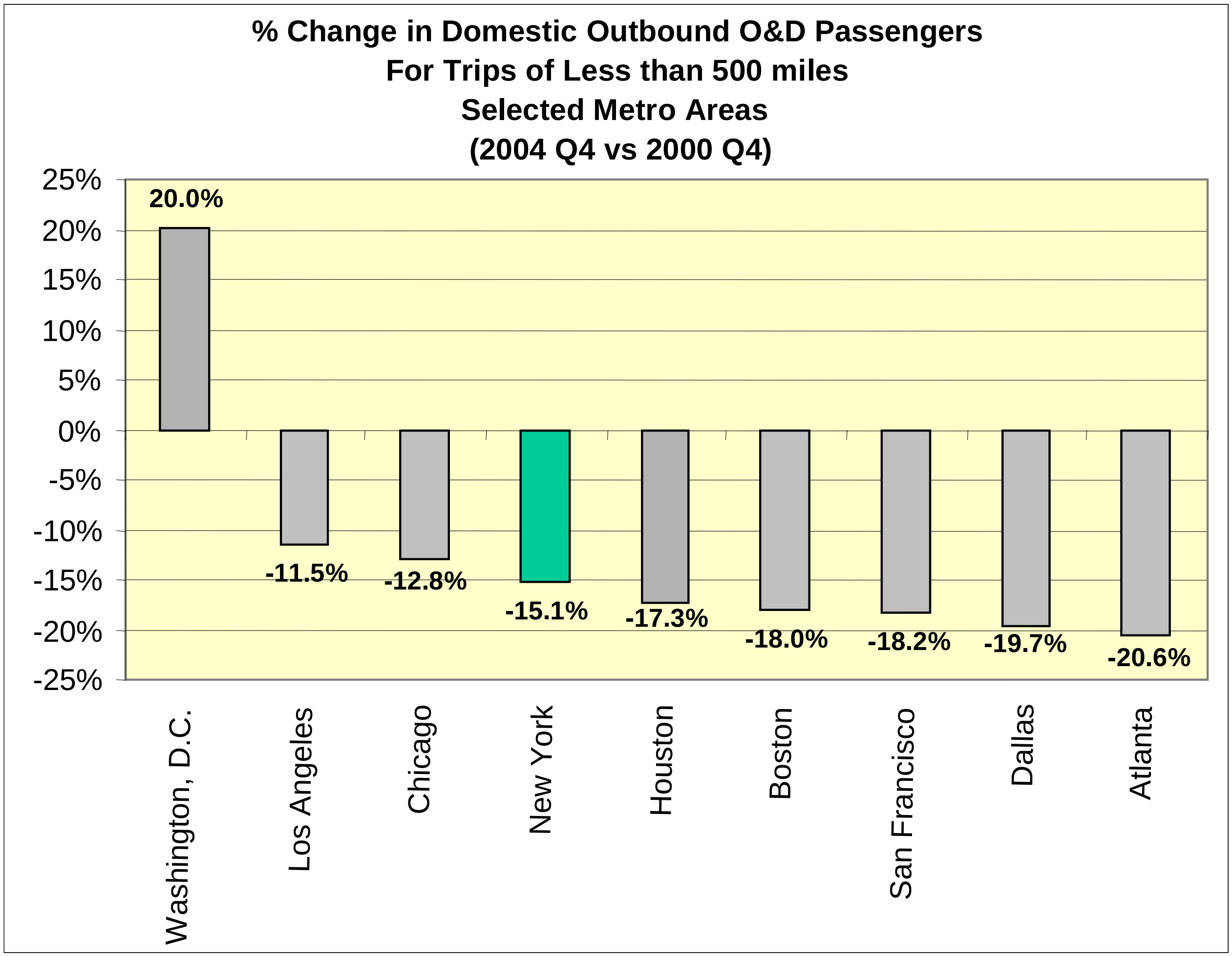
Sources: US DOT T-100 and Landrum & Brown analysis

Given the prior focus of major airlines on long-haul flying, this decline in yields has been a major factor in defining their current financial condition. While travel has increased in markets of greater than 1,000 miles, revenue per passenger mile has declined.

The current conditions indicate that the industry has significant over-capacity for long-haul service. JetBlue has indicated that future expansion from the New York region with their EMB-190 aircraft will be in short- and medium-haul point-to-point markets. This will increase competitive pressure on shorter-haul market fares. The major portion of JetBlue's expansion plans will focus on areas outside of New York.

Exhibit II-9 confirms that the decline in short-haul travel was fairly uniform, except where demand was stimulated by very low air fares and large increases in service at Washington DC. Thus, the long-term decline in air travel has occurred because of economic factors rather than because of fear of flying. On short-haul travel, the time savings is less; therefore a lower price is needed to produce a similar amount of travel. The economics of air travel are still about paying more to travel faster and save time. The more time saved, the more the trip is worth.

Exhibit II-9
ANNUAL CHANGE IN TRAVEL BY MAJOR MARKETS



Sources: US DOT T-100 Data and Landrum & Brown Analysis

II.9 PERCEIVED EFFECTS OF THE ATTACKS OF SEPTEMBER 11, 2001 – AIR CARGO INDUSTRY

A general economic downturn that began in 2000 adversely affected air cargo in terms of growth rates, and in some markets, total volumes. After September 11, 2001 cargo activity was immediately impacted. As a result, given the already weakened fiscal position of so many air cargo businesses, the financial stability of the entire air cargo industry was compromised. Critical impacts included:

- Increased use of trucks
- Escalation of insurance costs
- Consolidation among smaller firms
- Failure of many small cargo airlines and smaller support firms
- Higher security costs
- Longer processing time because of security
- Increased available freighter capacity, driving down rates

Since 2001, the industry has generally demonstrated modest growth. Patterns however, have been difficult to establish given the changes that have occurred and are continuing to occur. The shifting of the mail contract to FedEx in August 2001 has altered reporting of air cargo and mail volumes and changed the industry's understanding of how much cargo is actually moved. For purposes of this forecast, the definition of air cargo includes all mail.

The passenger airlines have decreased the number of flights they operate and have reduced the size of aircraft on many remaining flights. This has reduced the aircraft belly capacity available for cargo, which has consequently forced the diversion of cargo to trucks and dedicated freighter/integrator aircraft. Additionally, because of the more stringent application of the "known shipper rule"[1], passenger carriers are either reluctant to, or constrained from, accepting some freight. As a result more freight flows through to freight forwarders who make use of multiple modes of cargo shipment.

This forecast assumes that the structural changes to the air cargo industry are permanent and that emerging trends for air cargo security will continue. As the passenger airlines grow, larger aircraft will enter the mix, thereby increasing capacity available for belly cargo. These industry changes will have little impact at the NYSDOT airports since major changes in the passenger carrier fleets are not expected, and SWF's air cargo is almost exclusively transported via freighters today.

[1] The "known shipper rule" allows shippers that have an established business history with air carriers or freight forwarders to ship cargo on planes.

II.10 AIRLINE INDUSTRY OUTLOOK

Two major airlines have emerged from bankruptcy protection in 2006. The remaining two carriers are unlikely to emerge from bankruptcy until 2007. However, it is expected that they will continue to fly so long as they do not sustain any labor actions. If either carrier has a labor action, it would stop flying and it is unlikely that it would resume. One or more airline mergers might be an outcome, similar to the merger between US Airways and America West.

High fuel costs are likely to continue driving smaller regional jet aircraft out of competitive markets where the cost of providing service would exceed revenue. Larger regional jet aircraft have higher labor productivity and will continue to enter the market. Major airlines are likely to lease these larger aircraft from independent providers. However, they may use their own crews to operate them (like US Airways). Small regional jet and prop aircraft will likely continue in markets (especially short-haul) where yields are sufficiently high to cover the high costs of providing service.

For this forecast, it is assumed that:

- The industry will continue to replace smaller regional jet aircraft with larger regional jet aircraft that have lower operating costs per passenger mile.
- More narrow-body aircraft will continue to enter the fleet
- Narrow-body aircraft will largely be the same size as the existing fleet
- The overall financial health of the industry will improve with increasing fares. However, fare levels are not likely to increase to year 2000 levels

II.11 EFFECT OF AIRSIDE CONGESTION

Increasing airside congestion at many large hub airports will likely only have a limited effect on demand. As congestion increases, airlines have responded by increasing the travel time in the schedule. While this increases airline costs, it tends to hide the extent of the congestion problem since airlines strive to maintain an 85 percent or better on-time performance. In addition, airlines will also increase time between flights so that delays on one flight have only a limited effect on the next flight.

By increasing the amount of time the flight takes, the airline tends to make the short-haul flight (less than 500 miles) less attractive when compared to the travel time of alternative travel modes, such as rail or driving. This has already been demonstrated by the approximately half hour increase in travel time that resulted from changed security procedures after September 11, 2001. This is equivalent to a half-hour delay on every flight. As described in Section II.7, The market response to this half-hour increased travel time was a decline in short-haul flights and virtually no change in demand for long-haul flights.

The major difference between travel time increases that result from increasing airside congestion and travel time increases that result from security are that the time increases are unequal between airports. Small regional airports are not likely to see airside congestion while many large hub airports such as EWR, LGA, and JFK, have airside congestion today and could have increased airside congestion in the future. The increases in travel time due to security requirements are similar for all airports.

Thus, increases in airside congestion could change passenger demand at the smaller regional airports if:

1. **In trips less than 500 miles to an un-congested airport, where comparable (competing) air service already exists at the smaller airport.** Competing service exists at ISP (to BWI, CLE, and CVG), at HPN (to CLE, CVG, DTW, IAD, and PIT), and at SWF (DTW). These markets could see introduction of larger aircraft on current trips in response to increasing airside congestion at EWR, LGA and JFK as long as service pricing is comparable. This assumes that the longer ground travel time is less than the increase in total travel time to the large hub airport.

2. **In trips where the origin of the passenger trip was substantially closer to the smaller airport and the where competing connecting service already exists through an un-congested hub airport**. Passenger demand that originates from within 30 minutes of ISP, HPN, or SWF and is longer than 60 minutes from EWR, LGA and JFK could be recaptured by these airports, if comparably timed connecting air service through an un-congested airline hub such as BWI, CLE, CVG, DTW, and IAD is available. The thirty minute difference in ground travel time only partially offsets the shorter travel time difference available on non-stop service from EWR, LGA or JFK. However, the improved service reliability provided by ISP, HPN, and SWF combined with the high reliability of an un-congested airline hub may make the connecting service more attractive, if service pricing is comparable.

II.12 EFFECT OF REGIONAL GROUND TRANSPORTATION CONGESTION

The passenger surveys have demonstrated that travel time to the airport, especially from home, is an important factor for airport choice. Given equal air service quality and similar pricing, passengers will choose the closer airport. Some passengers will choose the closer airport, even when the air trip is longer or costs more.

As ground transportation congestion increases it has the net effect of increasing the length of the trip made by air travel, thereby reducing the net travel time savings gained by using air transportation. In short-haul travel, where alternative modes of transportation exist (such as by car or by rail), air travel may lose some demand to other modes of transportation. In long-haul travel, where air travel is frequently the only mode of choice, air travel will still be used. Thus, increased levels of ground transportation congestion will reduce demand for short-haul travel, but will not change demand for long-haul travel.

The net effect increased ground transportation congestion will be to increase the travel time to the airport. From more distant locations, the increased congestion will become a factor in airport choice. To the extent that ground transportation congestion increases unequally among the airports, airport choice decisions will change. However, airport choice will only change if comparable air service (destination and price) is available at the closer airport.

Thus, increases in ground transportation congestion could change passenger demand at the smaller regional airports in a manner similar to the changes that would result from air side congestion:

1. **In trips less than 500 miles to an un-congested airport, where comparable (competing) air service already exists at the smaller airport.**

2. **In trips where the origin of the passenger trip was substantially closer to the smaller airport and the where competing connecting service already exists through an un-congested hub airport**.

In the past, airlines tended to specialize at one or more of a region's airports rather than providing service to all of them. The domestic legacy airlines are now serving all three of the Port Authority of New York and New Jersey (PANY&NJ) airports and some of the other regional airports as well. It is not clear whether the airlines are changing service patterns within the system of airports in response to ground transportation issues or primarily for competitive reasons. Often it takes a new entrant airline to establish service within a regional airport system to prompt incumbent carriers to expand their service.

Improving the regional ground transportation system serving an airport has the effect of extending the service area for the airport. Improvements to the roadway network provide the largest increase in service area since virtually all passengers using ISP arrive by some type of private car (including taxi, limo, or rental car). Point-to-point rail service only increases access to areas that are easily accessible to stations. Further, rail service must be conveniently timed with flight arrivals (including delayed arrivals) and departures and have airport station facilities that promote an easy transfer between rail and air. If park-and-ride concepts are used at out-lying stations, security must be provided for over-night parking and rates must be comparable or less than airport rates.

Generally, the survey has found that the great majority of passengers use airports that are within 60 minutes of their local trip origins. Thus, rail access must provide a maximum of a forty to fifty minute travel time to the airport from the furthest station (allowing for some travel time to the station).

II.13 LEAKAGE OF DEMAND TO OTHER AIRPORTS

"Leakage" of demand occurs when passengers use an airport other than the airport most convenient (usually closest) to their trip origin. Passengers choose to use a more distant airport because the more distant airport has superior (better timed or more frequent) air service, or more or less equivalent air service at a sufficiently lower price to induce a longer ground transportation trip.

The air passenger survey for the FAA Regional Air Service Demand Study assessed leakage through a series of questions that asked about airport preferences, alternative airports considered for the trip, and reasons for choosing an airport for a particular trip. The air passenger surveys have demonstrated that passengers do consider and use alternate airports for various trips.

Table II-1 shows that the majority of the users of the three NYSDOT airports expressed a preference for using the three airports. A significant percentage of these passengers began their trip from a point that was closer to another airport: ISP – 58 percent; SWF – 41 percent; and HPN – 42 percent.

Table II-1
PREFERRED AIRPORTS

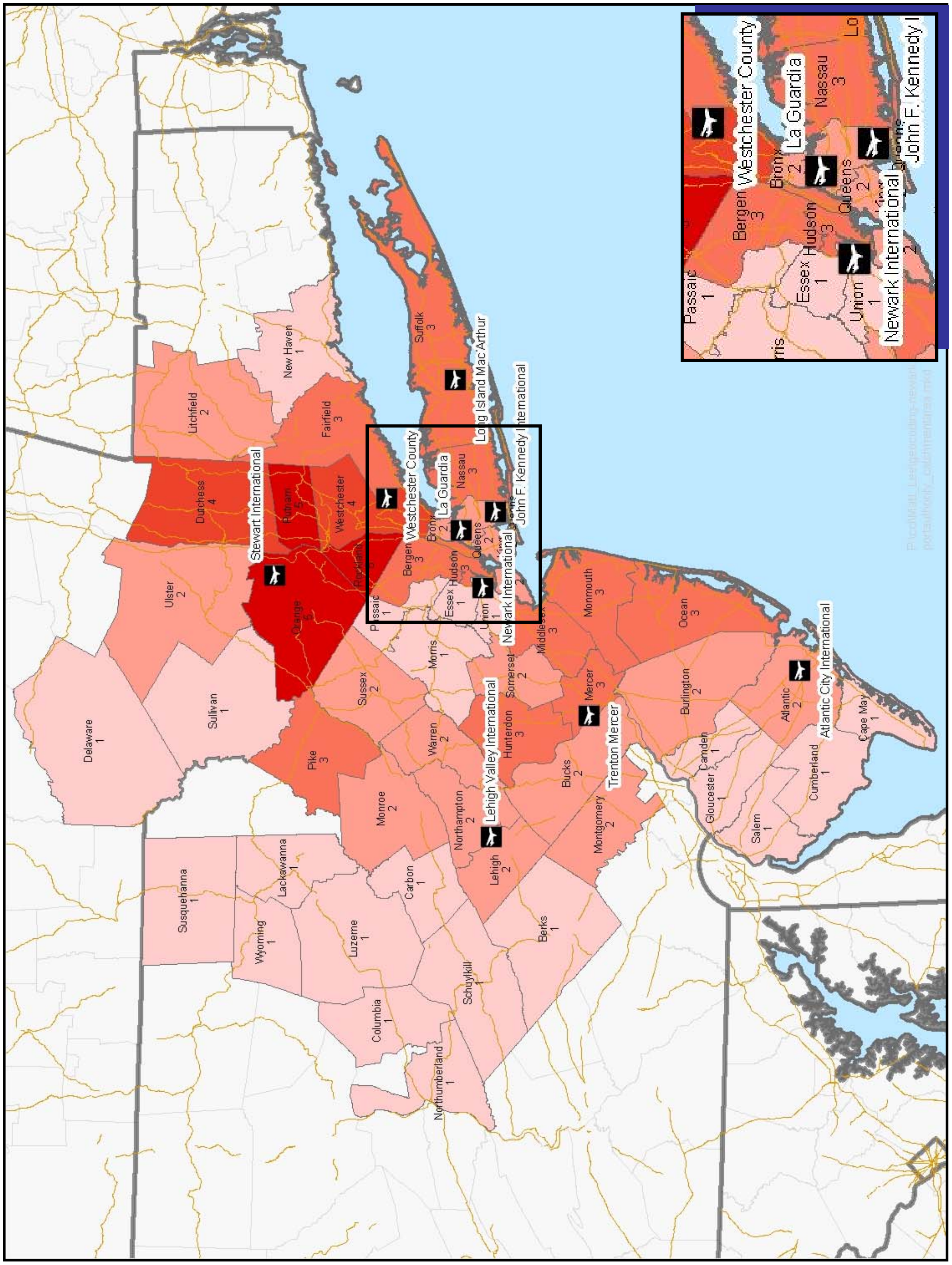
	AIRPORT REPORTING		
Airport Preferred	**HPN**	**ISP**	**SWF**
HPN	71%	1%	1%
ISP	N/A	71%	N/A
SWF	4%	1%	80%
LGA	16%	12%	5%
JFK	4%	9%	3%
EWR	3%	4%	8%

Source: NYSDOT 2005 Air Passenger Survey

Exhibit II-10 shows the number of airports used by travelers from each county in the combined service area for the FAA Regional Air Service Demand Study (all 9 airports). Rockland, Orange and Putnam Counties in New York State are served by five different airports. Passaic, Essex, Morris and Union Counties in New Jersey are served only by EWR.

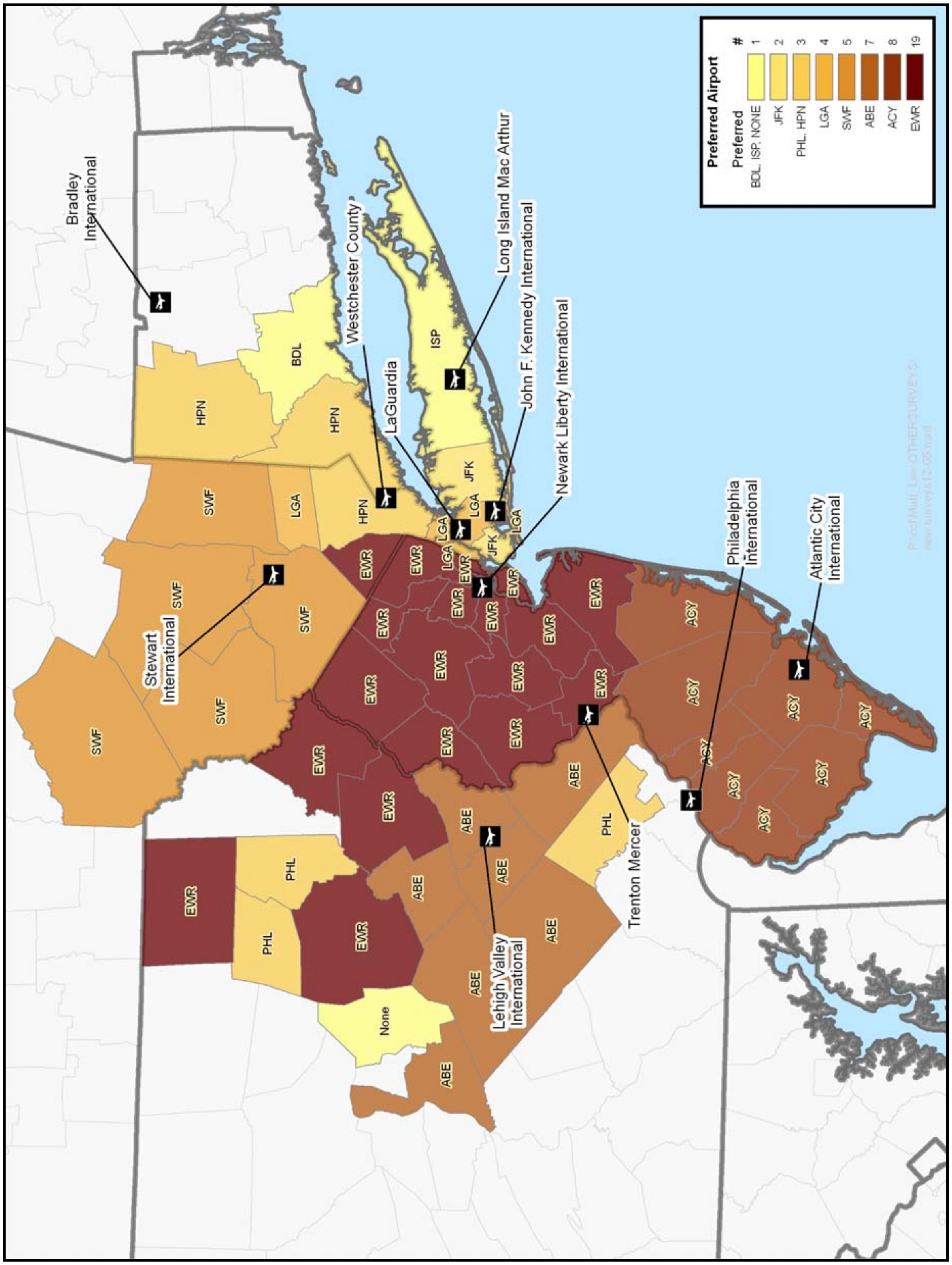
Exhibit II-11 shows the most preferred airport for each county in the expanded study area (all 9 airports). Local barriers to transportation such as the Hudson River clearly shape the service areas for each airport.

Exhibit II-10
NUMBER OF AIRPORTS SERVING COUNTIES



Sources: PANYNJ/NYSDOT/DVRPC 2005 Air Passenger Surveys

Exhibit II-11
PREFERRED AIRPORT BY COUNTY



Sources: 2005 PANYNJ/NYSDOT/DVRPC Air Passenger Surveys

Table II-2 shows that of the passengers that considered another airport other than the one that they flew from, the largest commercial service airports in the region (LGA, JFK, and EWR) were most often considered.

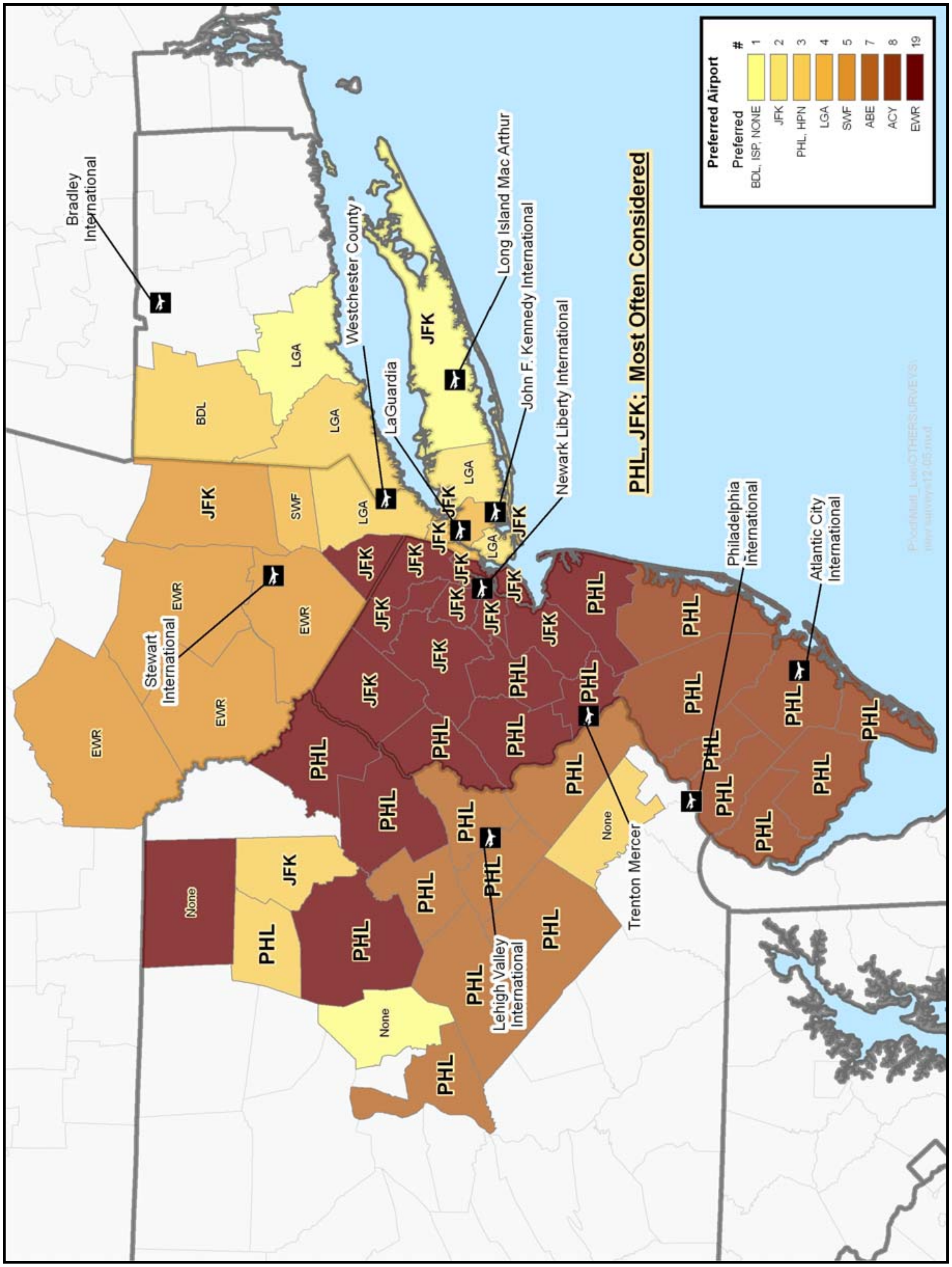
Table II-2
OTHER AIRPORTS CONSIDERED WHEN PLANNING TRIP

	AIRPORT REPORTING		
Airport Considered	**HPN**	**ISP**	**SWF**
LGA	**54%**	**47%**	**20%**
JFK	**18%**	**44%**	**18%**
EWR	**3%**	**4%**	**30%**
SWF	**11%**	**N/A**	**N/A**
BDL	**10%**	**N/A**	**N/A**
HPN	**N/A**	**N/A**	**7%**

Source: NYSDOT 2005 Air Passenger Survey

Exhibit II-12 shows both the preferred airport (as colors) and the most frequently cited considered airport for the entire study area (all 9 airports). The physical barriers to transportation still shape airport choice. Areas on the west side of the Hudson River in New York State consider EWR, but prefer SWF. Areas on the east side of the Hudson River in Connecticut prefer SWF, HPN or Bradley International Airport (BDL), but will consider JFK and LGA. However, exceptions occur when an airport offers unique or lower priced air services such as that offered at JFK. Northern New Jersey passengers consider JFK. The recent expansion of low fare service offerings at Philadelphia International Airport (PHL) appears to have an influence on airport choice for central, southern and western New Jersey. Comparing the alternative airports considered by passengers to current service areas indicates that EWR is more vulnerable to a loss of passenger volume to either JFK or PHL. By contrast, JFK and LGA are more likely to lose passengers to each other.

Exhibit II-12
OTHER AIRPORTS CONSIDERED WHEN PLANNING AIR TRAVEL



Sources: PANYNJ/NYSDOT/DVRPC 2005 Air Passenger Surveys
Filepath: H:\New York System Forecast\Documents\NYSDOT\2nd Draft\SWF\II. Impact Factors.doc

III. REGIONAL AND LOCAL SOCIOECONOMIC TRENDS

Air transportation demand at ISP depends on the combination of trends in the airline industry, national and international economic conditions, and the socioeconomic conditions within the airport catchment area as defined by the passenger survey. This section summarizes recent trends and future forecasts of population, employment, income, Per Capita Personal Income (PCPI), and Regional Gross Domestic Product (GRP). **Table III-1** presents the socioeconomic variables for the ISP catchment area.

Historical and forecast population, employment, income, and PCPI were obtained from Woods and Poole Economics, Inc. of Washington, D.C. GRP data was provided by Regional Economic Models, Incorporated (REMI). All economic variables were converted to constant dollars to eliminate any distortions resulting from inflation.

Table III-1
ISP SOCIOECONOMIC VARIABLES

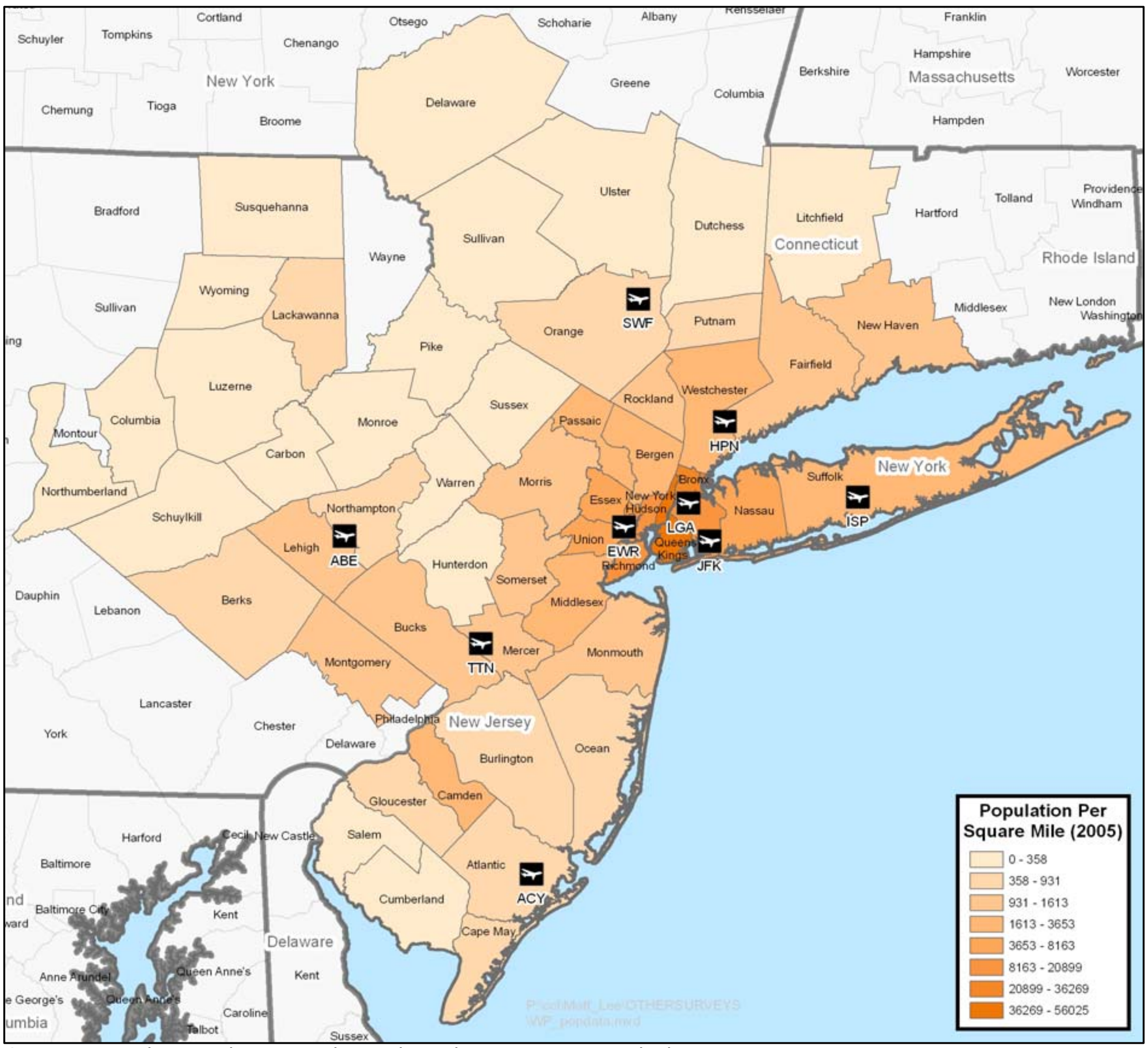
Calendar Year	Population (thousands)	Per Capita Personal Income ($1996)	Personal Income ($1996, millions)	Employment (thousands)	Gross Regional Product (GRP) ($2005, millions)
1985	2,622	$28,305	$74,203	1,327	$88,884
1990	2,610	$32,463	$84,716	1,378	$103,485
1995	2,674	$32,769	$87,635	1,369	$105,915
2000	2,760	$39,412	$108,793	1,501	$122,613
2005	2,830	$40,529	$114,711	1,567	$136,451
2010	2,891	$42,578	$123,110	1,628	$173,299
2015	2,961	$44,748	$132,493	1,688	$202,501
2020	3,036	$47,099	$142,977	1,749	$224,932
2025	3,117	$49,622	$154,672	1,810	$252,946
AAG:					
1985-1995	0.2%	1.5%	1.7%	0.3%	1.8%
1995-2005	0.6%	2.1%	2.7%	1.4%	2.6%
1985-2005	0.4%	1.8%	2.2%	0.8%	2.2%
2005-2025	0.5%	1.0%	1.5%	0.7%	3.1%

Sources: Woods & Poole Economics, Inc; REMI.
Note: AAG=Average Annual Compound Growth Rate.
Filepath: H:\New York System Forecast\Woods&Poole\[2005 NY Catchment Area.xls]ISP

III.1 POPULATION

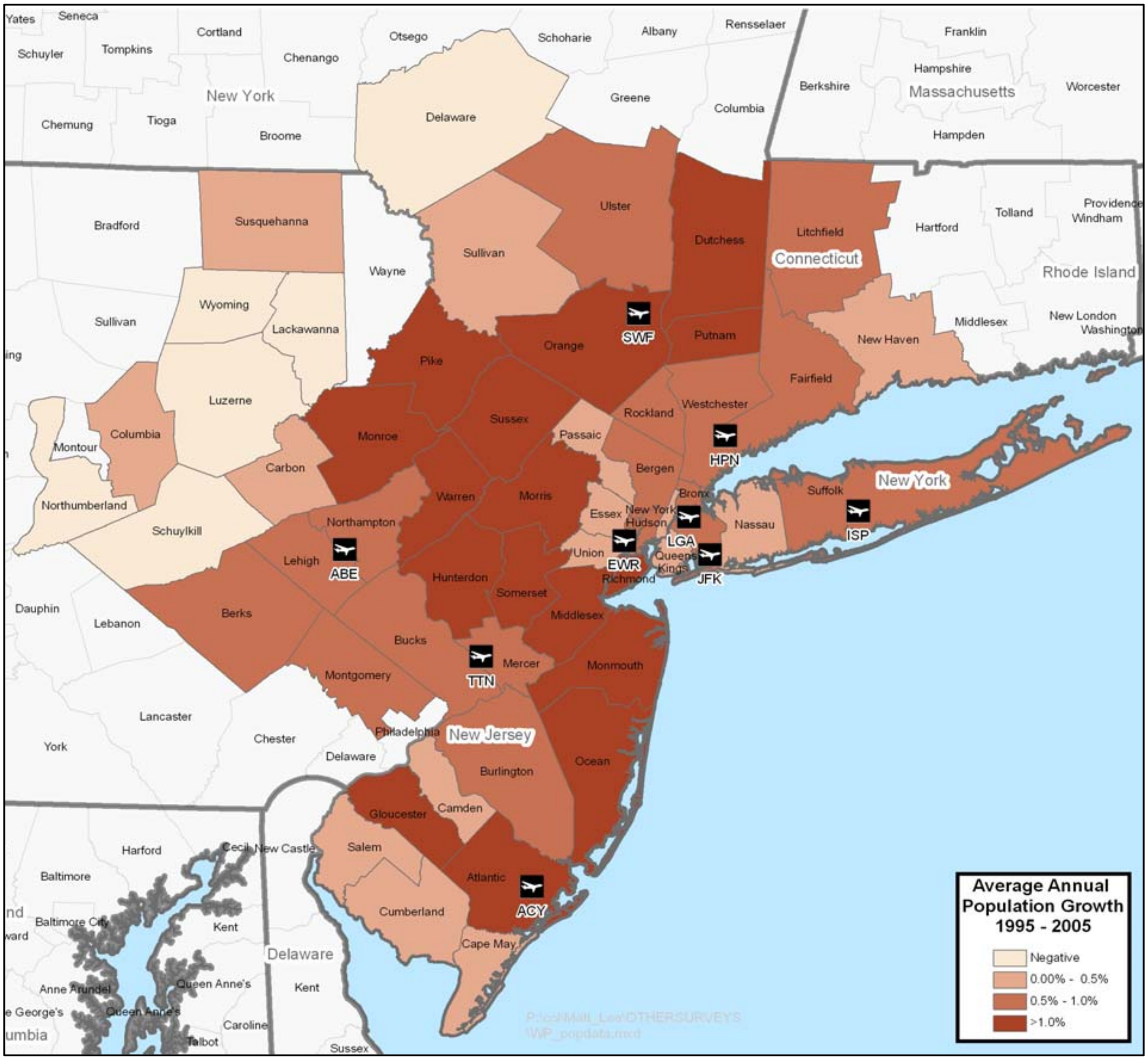
The ISP catchment area is made up of Nassau and Suffolk counties. In 2005, an estimated 2.8 million people lived in the catchment area, split almost evenly between the two counties. Indeed, Suffolk ranks 4th and Nassau ranks 6th out of the entire 54 county study area in terms of population. The population of the ISP catchment area averaged growth of 0.4 percent per year between 1985 and 2005 and is projected to grow at a similar rate over the next twenty years (0.5 percent per year, on average). **Exhibits III-1** through **III-3** summarize current and future population counts and growth in the ISP catchment area, along with data for the 54 county study area.

Exhibit III-1
POPULATION DENSITY (2005)



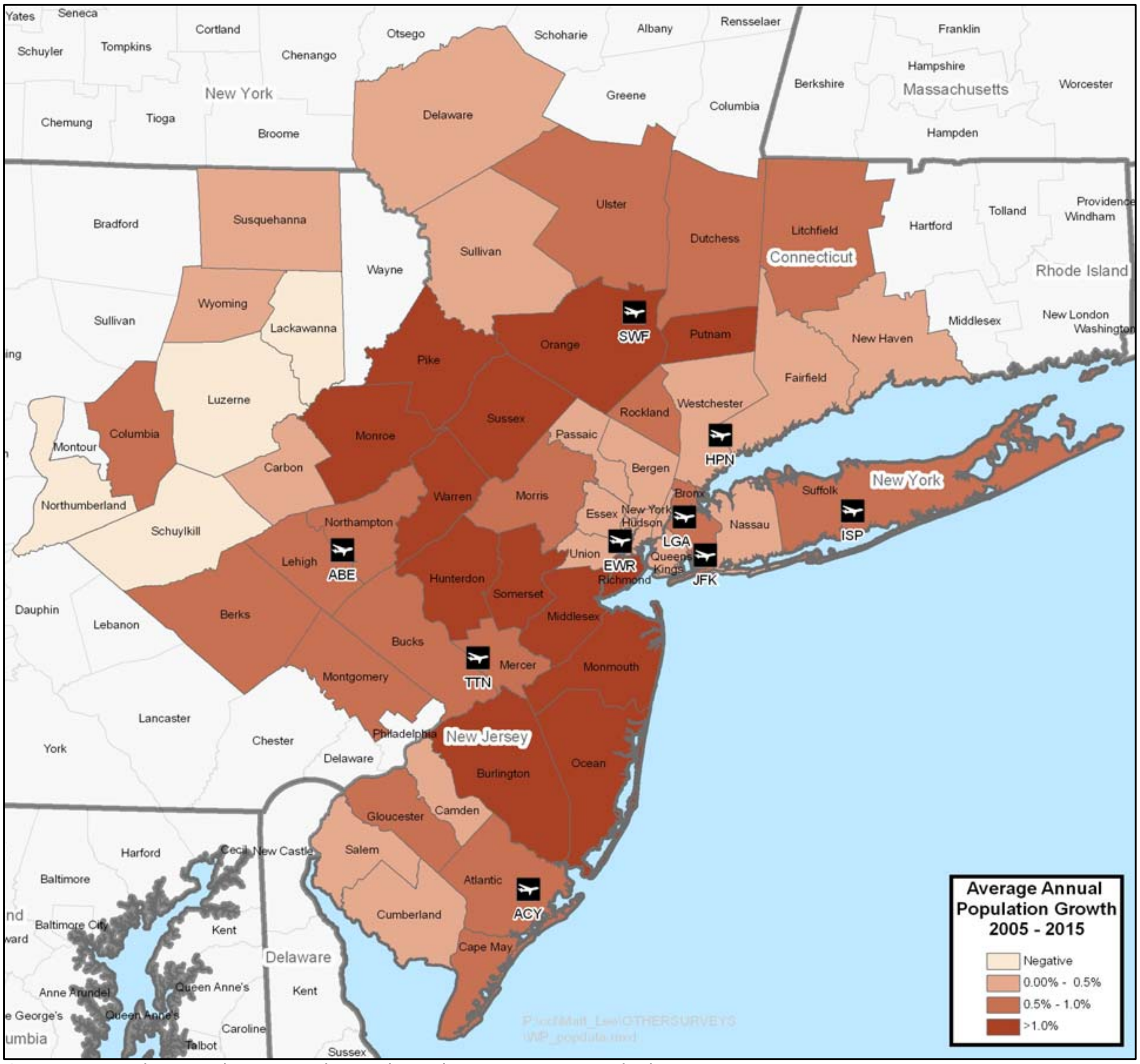
Sources: Woods & Poole Economics and Landrum & Brown Analysis.

Exhibit III-2
HISTORICAL POPULATION GROWTH (1995-2005)



Sources: Woods & Poole Economics and Landrum & Brown Analysis.

Exhibit III-3
FORECAST POPULATION GROWTH (2005-2015)



Sources: Woods & Poole Economics and Landrum & Brown Analysis.

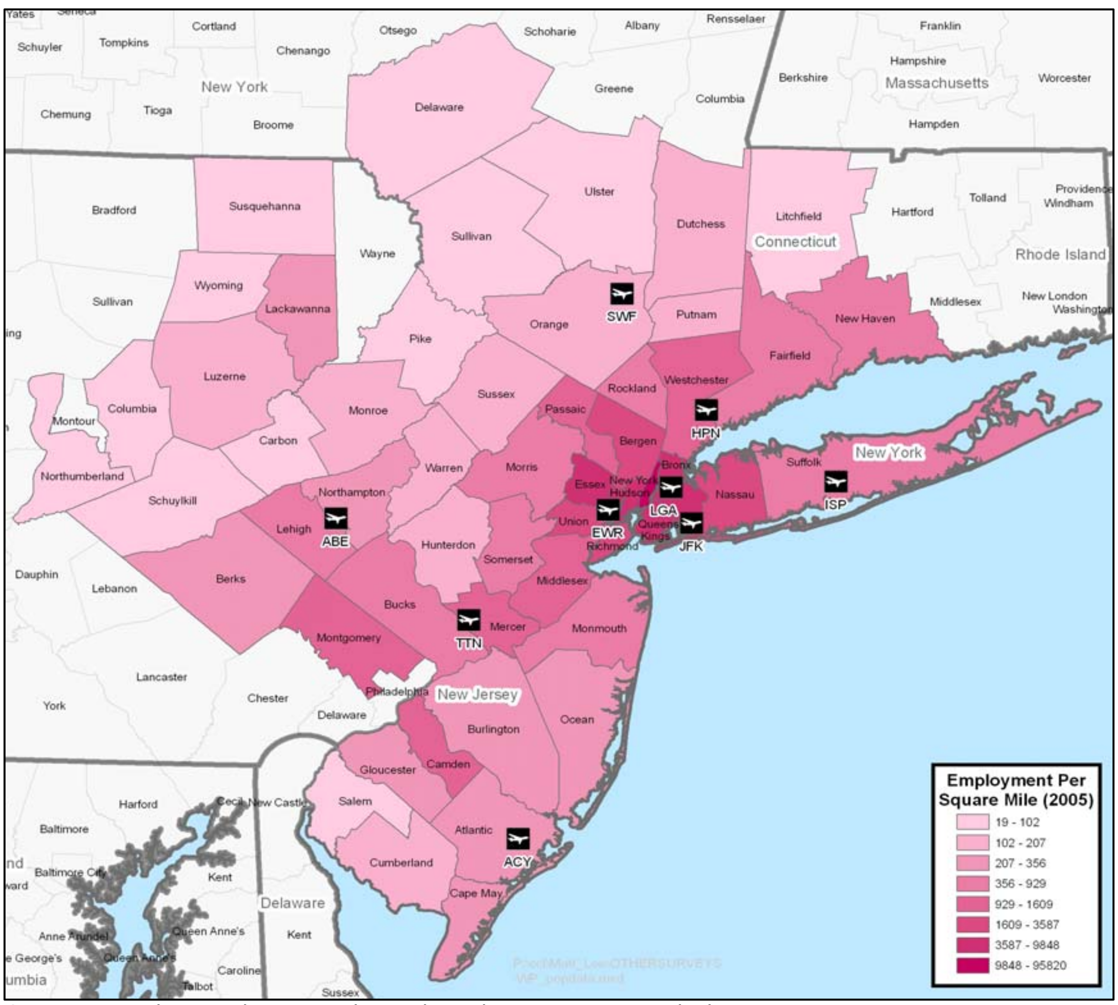
III.2 EMPLOYMENT

The ISP catchment area also has a strong employment base with an estimated 1.6 million jobs in 2005. Nassau (791,000 jobs) and Suffolk (776,000 jobs) ranked 2nd and 3rd in terms of employment in the 54 county study area.

Over the past twenty years, employment in the ISP catchment area averaged growth of 0.8 percent. Projected employment growth over the next twenty years (0.7 percent per year) is expected to be consistent with historical rates. Notably both the historical and forecast employment rates for the ISP catchment area exceed the population growth rates.

Exhibit III-4 summarizes 2005 employment per square mile ratios by county in the ISP catchment area and the 54 county study area.

Exhibit III-4
EMPLOYMENT DENSITY (2005)



Sources: Woods & Poole Economics and Landrum & Brown Analysis.

III.3 PERSONAL INCOME

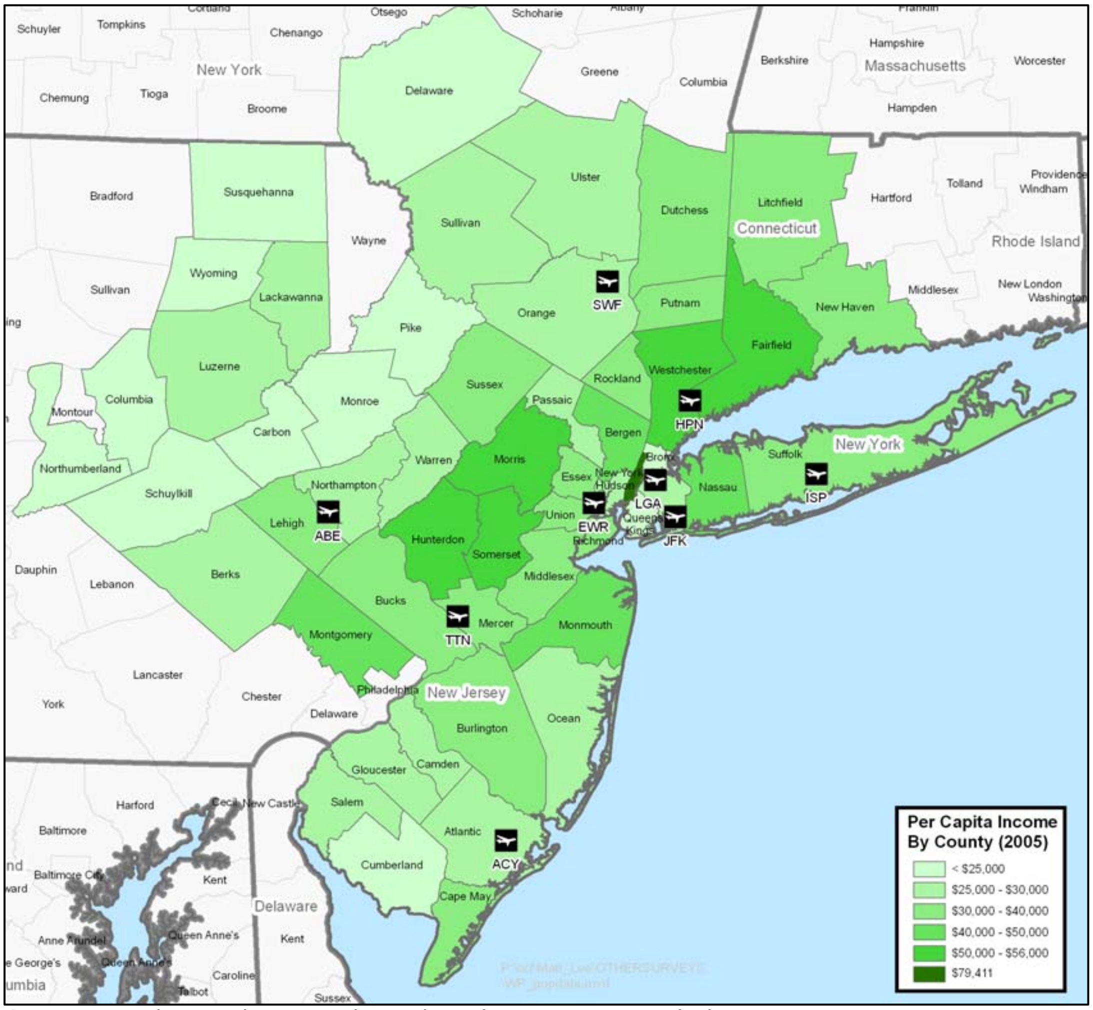
Personal income for the ISP air service area grew at a rate of 2.2 percent per year from 1985 to 2005. For the forecast period, personal income for the ISP catchment area is expected to increase at an average rate of 1.5 percent annually.

III.4 PER CAPITA PERSONAL INCOME (PCPI)

Inflation adjusted PCPI for the ISP catchment area was $40,529 in 2005, 10 percent higher than 54-county study area average ($36,770). Between 2005 and 2025, PCPI for the ISP catchment area is expected to average growth of one percent per year, which is lower than the historical 20-year average annual growth rate (1.8 percent per year).

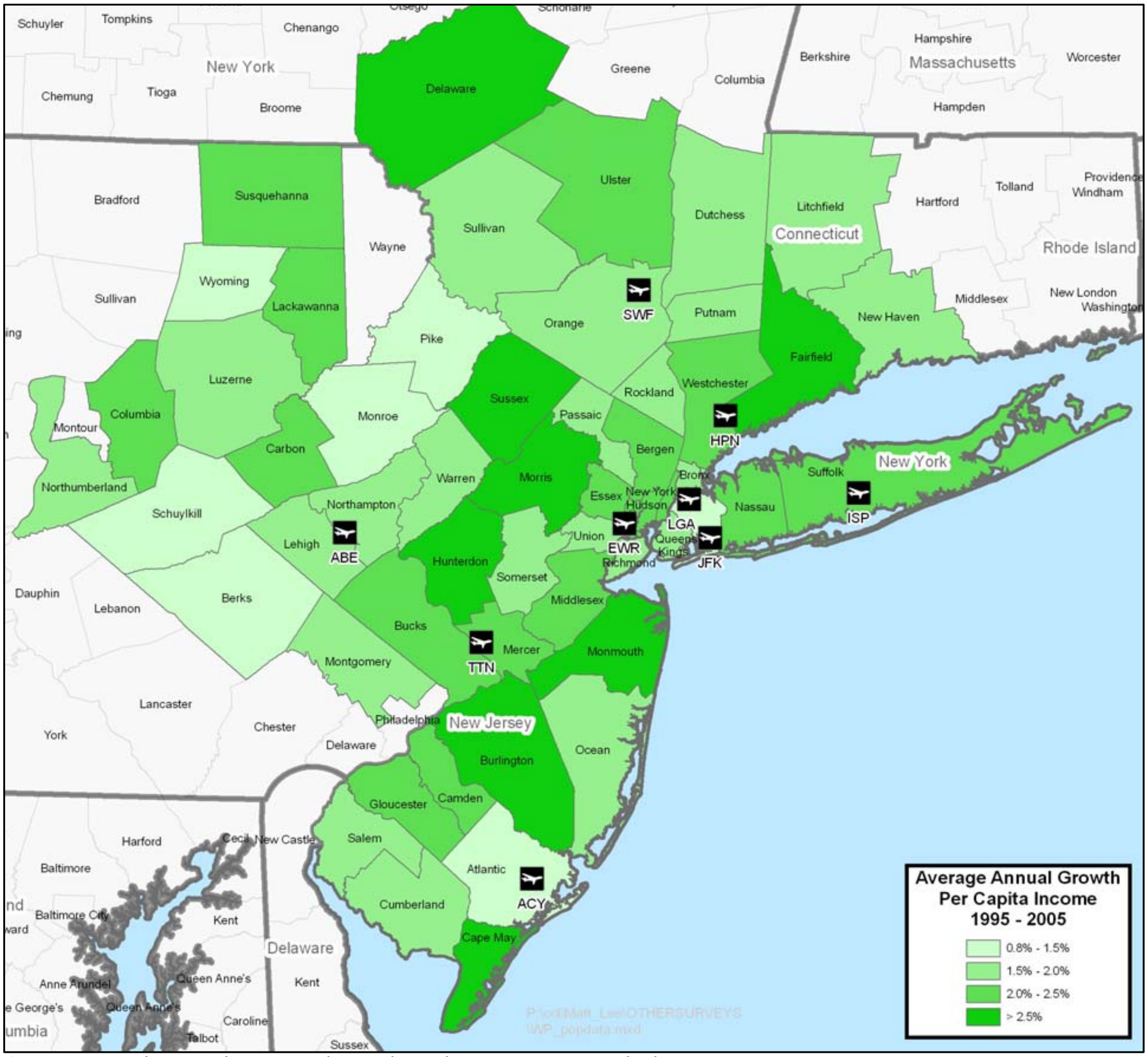
Exhibits III-5 through **III-7** summarize 2005 PCPI and historical and forecast growth in PCPI by county in the New York region. Year 2005 PCPI levels are the highest in New York and Westchester counties in New York state, Fairfield county in Connecticut, and Morris, Hunterdon, and Somerset counties in New Jersey. Fairfield county in Connecticut, Carbon county in Pennsylvania, Kings and Richmond counties in New York State, and Bergen, Middlesex, and Hudson Counties in New Jersey are projected to be the fastest growing counties in the region between 2005 and 2015.

Exhibit III-5
PER CAPITA PERSONAL INCOME (2005)



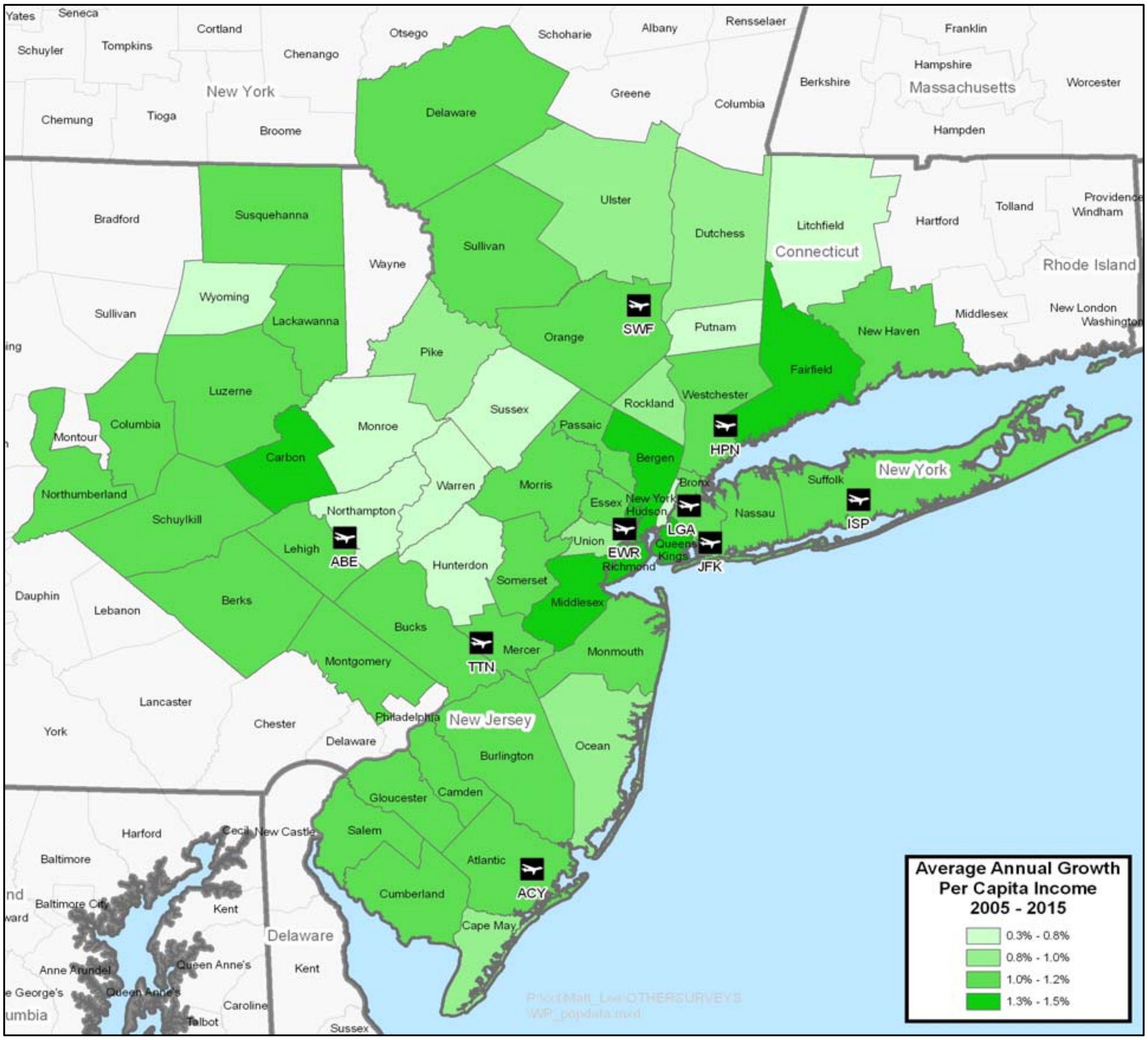
Sources: Woods & Poole Economics and Landrum & Brown Analysis.

Exhibit III-6
HISTORICAL PCPI GROWTH (1995-2005)



Sources: Woods & Poole Economics and Landrum & Brown Analysis.

Exhibit III-7
FORECAST PCPI GROWTH (2005-2015)



Sources: Woods & Poole Economics and Landrum & Brown Analysis.

III.5 REGIONAL GROSS DOMESTIC PRODUCT (GRP)

GRP for the ISP air service area grew at a rate of 2.2 percent per year from 1985 to 2005. Over the same period, the U.S. economy grew at a faster rate, averaging growth of 3.1 percent per year. Over the forecast period, GRP for the ISP catchment area is expected to grow at 3.1 percent per year, on average.

Filepath: H:\New York System Forecast\Documents\NYSDOT\2nd Draft\ISP\III. ISP Regional and Local Socioeconomic Trends.doc

IV. PAST TRENDS IN AVIATION ACTIVITY

This section summarizes recent historical aviation activity at ISP. It shows how the airport's traffic has evolved and will serve as the starting point for the development of comprehensive forecasts. A review of recent trends also identifies those factors, which have, or in the future might, influence future traffic volumes.

IV.1 SUMMARY OF HISTORICAL ENPLANED PASSENGERS

Total enplaned passengers at ISP increased from 550,000 in 1990 to 1.1 million in 2005 (see **Table IV-1**). During this 15-year period, domestic origin and destination passengers accounted for virtually all the enplanements reported at ISP (i.e. airport users were either local residents or visitors rather than connecting passengers). The enplanement history at ISP can be divided into two broad time periods, coinciding with the periods before and after Southwest Airlines initiated service at the airport in 1999. Between 1990 and 1998, enplanement volumes averaged 544,000 enplanements annually, ranging from a low of 436,000 enplanements in 1998 to a high of 600,000 enplanements in 1994.

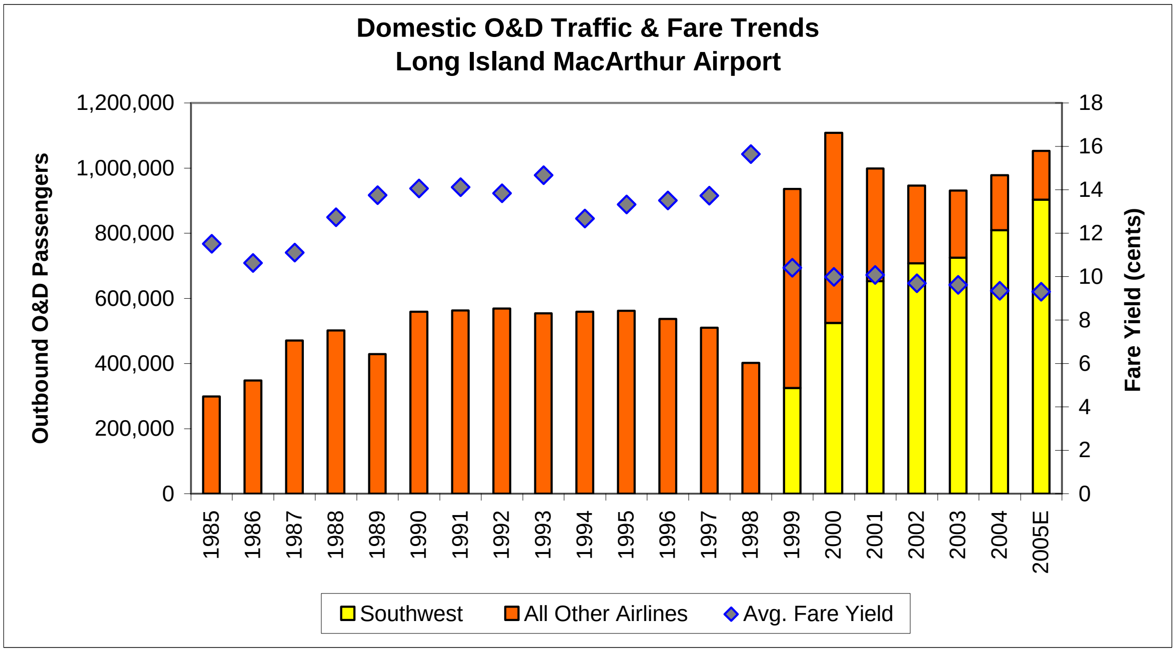
Table IV-1
ISP HISTORICAL ENPLANEMENT TRENDS

Calendar	Air Carrier		Commuter		Total	
Year	Enpax.	% of Tot.	Enpax.	% of Tot.	Enpax.	% of Tot.
1990	405,552	73.7%	144,677	26.3%	550,229	100.0%
1991	414,262	74.2%	144,188	25.8%	558,450	100.0%
1992	378,462	67.7%	180,595	32.3%	559,057	100.0%
1993	387,849	68.5%	178,199	31.5%	566,048	100.0%
1994	435,531	72.5%	164,807	27.5%	600,338	100.0%
1995	397,682	70.0%	170,247	30.0%	567,929	100.0%
1996	415,943	76.4%	128,353	23.6%	544,296	100.0%
1997	376,030	73.7%	134,066	26.3%	510,096	100.0%
1998	260,371	59.7%	175,589	40.3%	435,960	100.0%
1999	725,631	77.3%	212,669	22.7%	938,300	100.0%
2000	890,601	79.5%	229,232	20.5%	1,119,833	100.0%
2001	802,221	79.4%	207,558	20.6%	1,009,779	100.0%
2002	755,276	78.6%	205,826	21.4%	961,102	100.0%
2003	749,254	79.7%	190,585	20.3%	939,839	100.0%
2004	813,878	82.6%	171,109	17.4%	984,987	100.0%
2005	904,993	85.7%	150,510	14.3%	1,055,503	100.0%
AAG:						
1990-1998	-5.4%		2.5%		-2.9%	
1998-2005	19.5%		-2.2%		13.5%	
1990-2005	5.5%		0.3%		4.4%	

Sources: Airport Records, DOT, Schedule T-100 and T-3.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Commercial Pas

Enplanement volumes spiked upwards in 1999 and reached 1.1 million enplanements in 2000, primarily resulting from the initiation of service by Southwest in March 1999. The traffic stimulation resulting at ISP from Southwest's low-fare service is presented in **Exhibit IV-1**. Although, Southwest has continued to increase its enplanement volumes on an annual basis; total enplanements at ISP have been relatively flat since 2000. In part this has been due to the lingering effects of an economic recession, the September 11, 2001 terrorist attacks, the 1990 Iraq War, and the Severe Acute Respiratory Syndrome (SARS) outbreak which served to dampen demand for air travel, particularly between 2001 and 2003.

Exhibit IV-1
ISP IMPACT OF LOWER AIR FARES

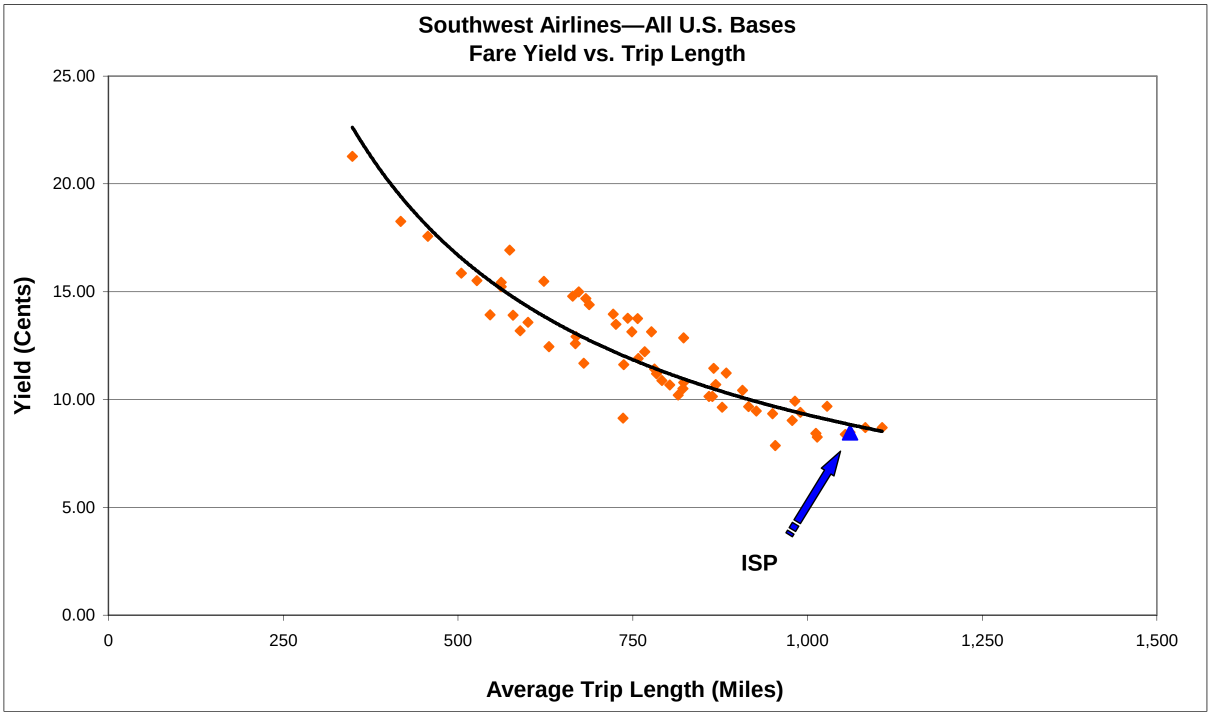


Source: DOT, *Air Passenger Origin-Destination Survey.*
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\O&D\[Out Pax by Car 90-05Q3 Time Series.xls]ISI

It is also evident from the above graphic that Southwest has also cannibalized traffic from other airlines operating at the airport. In 2005, just 151,000 enplanements were reported by airlines other than Southwest at ISP versus 592,000 enplanements in 2000 (Southwest's first full calendar year of service).

One of the implicit assumptions of the forecast is that the significant fare stimulation at ISP below current levels is unlikely over the forecast period. The primary rationale behind this assumption is that almost 90 percent of all passengers at ISP are already enplaned on a low cost carrier (LCC). Moreover, ISP is also a relatively low-priced airport in Southwest's network (see **Exhibit IV-2**). In addition, a prolonged and seemingly permanent shift in the price of fuel is causing airlines, including Southwest, to raise ticket prices to better reflect the cost of providing service. Therefore, it is expected that future enplanement growth at ISP is more likely to occur through service expansion on current routes and to new destinations.

Exhibit IV-2
SOUTHWEST AVERAGE FARE YIELD—ALL U.S. BASES
(cents per mile)



Source: DOT, *Air Passenger Origin-Destination Survey.*
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\O&D\[SWA Base Avgs 12 months all US bases.xls]Yld Vs Itn Miles

IV.2 SUMMARY OF HISTORICAL AIRCRAFT OPERATIONS

For purposes of developing the operations forecast, ISP historical operations were segmented into five principal categories of aircraft operations: (1) Commercial Passenger; (2) All-Cargo/Freighter; (3) Non-commercial Air Taxi; (4) General Aviation; and (5) Military. **Table IV-2** details historical aircraft operations at ISP, thereafter this section focuses on historical trends in commercial passenger service at ISP. The operations history and forecast for the other four components of aircraft operations are discussed in Section VII**.**

Table IV-2
ISP HISTORICAL AIRCRAFT OPERATIONS

Calendar Year	Passenger Air Carrier	Passenger Commuter	Total Passenger	All-Cargo	Non-Comm Air Taxi	General Aviation	Military	Total
1995	9,256	25,546	34,802	502	2,220	142,284	3,645	218,255
1996	9,408	22,806	32,214	418	767	142,677	3,910	212,200
1997	8,532	21,037	29,569	404	1,441	160,098	3,718	224,799
1998	5,746	25,079	30,825	522	1,034	171,911	4,333	239,450
1999	15,240	23,209	38,449	522	658	161,237	3,514	242,829
2000	19,824	21,926	41,750	522	300	191,584	4,083	279,989
2001	18,740	21,729	40,469	520	288	181,415	3,899	267,060
2002	18,266	15,527	33,793	140	4,463	176,096	3,561	251,846
2003	16,978	13,989	30,967	0	5,840	141,551	3,155	212,480
2004	17,470	13,375	30,845	0	2,825	140,261	2,737	207,513
2005	19,932	13,187	33,119	284	2,280	132,514	2,438	203,754
Average Annual Growth Rates								
1995-2000	16.5%	-3.0%	3.7%	0.8%	-33.0%	6.1%	2.3%	5.1%
2000-2005	0.1%	-9.7%	-4.5%	-11.5%	50.1%	-7.1%	-9.8%	-6.2%
1995-2005	8.0%	-6.4%	-0.5%	-5.5%	0.3%	-0.7%	-3.9%	-0.7%

Sources: FAA, Terminal Area Forecast; DOT, Schedule T-100; *Official Airline Guide*; Landrum & Brown, Inc.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

Commercial passenger operations have typically accounted for between 13 and 16 percent of total operations at ISP. In 2005, a total of 33,100 passenger operations were reported at the airport, which was slightly lower than the 35,000 operations passenger operations 10 years earlier. Perhaps the most significant trends in air service at ISP pertain to the airlines providing service at the airport and the fleet of passenger aircraft used to serve a passenger base which doubled over the ten-year period.

Table IV-3 presents daily scheduled passenger service for the month of August 1995, 2000, 2005, and 2006 by airline. Airline concentration at ISP has increased over the past decade both in terms of the number of carriers serving the airport and the volume of capacity provided by a single carrier. In August 2006, four airlines will provide scheduled passenger service at ISP: Southwest, US Airways, Delta, and Continental. Southwest is expected to account for 73 percent of all commercial passenger flight departures and 90 percent of departing seats.

Although scheduled daily departures have declined over the 10-year period (54 daily departures in 1995 versus 44 in 2006), total departing seats have almost doubled due to a significant increase in the average gauge of passenger aircraft operated at ISP. The change in aircraft size has been driven by Southwest which operates only 137-seat Boeing 737 aircraft. Indeed, other airlines operating at the airport have collectively down-gauged their fleet at ISP. In 2006, all service provided by legacy carriers was through regional affiliates operating either turboprop or regional jet aircraft.

The number of destinations served from the airport also declined over the past decade, with 11 markets scheduled to be served in August 2006 versus 18 in

August 2000.[1] Most of the markets that have lost service from ISP are within 500 miles (i.e. short-haul markets) which is indicative of a broader national trend. On the demand side, onerous security requirements have added a considerable hassle factor to air travel which has caused an increasing number of potential air travelers to seek alternatives (e.g. car or rail). The decision to drive or use other forms of mass transit rather than fly has disproportionately affected travel in short-haul markets, as driving becomes an increasingly viable alternative the shorter the trip length. On the supply side, airlines (particularly legacy airlines) have cut capacity in short-haul markets, not only to better match capacity with demand, but also to cut costs as part of broader restructuring initiatives.

[1] In August 2006, Southwest will serve Baltimore (BWI), Chicago-Midway (MDW), Orlando (MCO), Ft. Lauderdale (FLL), West Palm Beach (PBI), Tampa (TPA), Las Vegas (LAS), Ft. Myers (RSW); Continental will serve Boston (BOS), US Airways will serve Boston (BOS) and Philadelphia (PHL); and Delta will serve Atlanta (ATL).

Table IV-3
ISP AVERAGE DAILY COMMERCIAL PASSENGER AIR SERVICE

	Flight Departures				Departing Seats				Avg. Seats per Flight				Markets Served			
Airline	1995	2000	2005	2006	1995	2000	2005	2006	1995	2000	2005	2006	1995	2000	2005	2006
Total—All Airlines	**54**	**63**	**49**	**44**	**2,766**	**5,359**	**4,578**	**4,857**	**52**	**85**	**93**	**111**	**14**	**18**	**14**	**11**
Southwest Airlines	-	21	28	32	-	2,842	3,783	4,380	-	137	137	137	-	8	8	8
US Airways	32	13	8	8	1,302	363	289	313	41	29	36	38	9	4	2	2
Delta Air Lines	9	12	7	3	199	990	350	150	22	83	50	50	1	4	2	1
Continental Airlines	-	2	7	1	-	81	155	14	-	43	23	19	-	1	3	1
Spirit Airlines	-	5	-	-	-	720	-	-	-	144	-	-	-	5	-	-
American Airlines	2	10	-	-	272	333	-	-	136	33	-	-	1	1	-	-
Tie Aviation	-	1	-	-	-	31	-	-	-	36	-	-	-	1	-	-
Carnival Air Lines	4	-	-	-	632	-	-	-	158	-	-	-	4	-	-	-
Midway Airlines	3	-	-	-	294	-	-	-	98	-	-	-	1	-	-	-
United Airlines	4	-	-	-	67	-	-	-	18	-	-	-	1	-	-	-
% of Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**								
Southwest Airlines	0%	33%	56%	73%	0%	53%	83%	90%								
US Airways	59%	20%	16%	19%	47%	7%	6%	6%								
Delta Air Lines	17%	19%	14%	7%	7%	18%	8%	3%								
Continental Airlines	0%	3%	13%	2%	0%	2%	3%	0%								
Spirit Airlines	0%	8%	0%	0%	0%	13%	0%	0%								
American Airlines	4%	16%	0%	0%	10%	6%	0%	0%								
Tie Aviation	0%	1%	0%	0%	0%	1%	0%	0%								
Carnival Air Lines	7%	0%	0%	0%	23%	0%	0%	0%								
Midway Airlines	6%	0%	0%	0%	11%	0%	0%	0%								
United Airlines	7%	0%	0%	0%	2%	0%	0%	0%								

Source: *Official Airline Guide.*

Note: Data for legacy carriers include activity for regional affiliates.

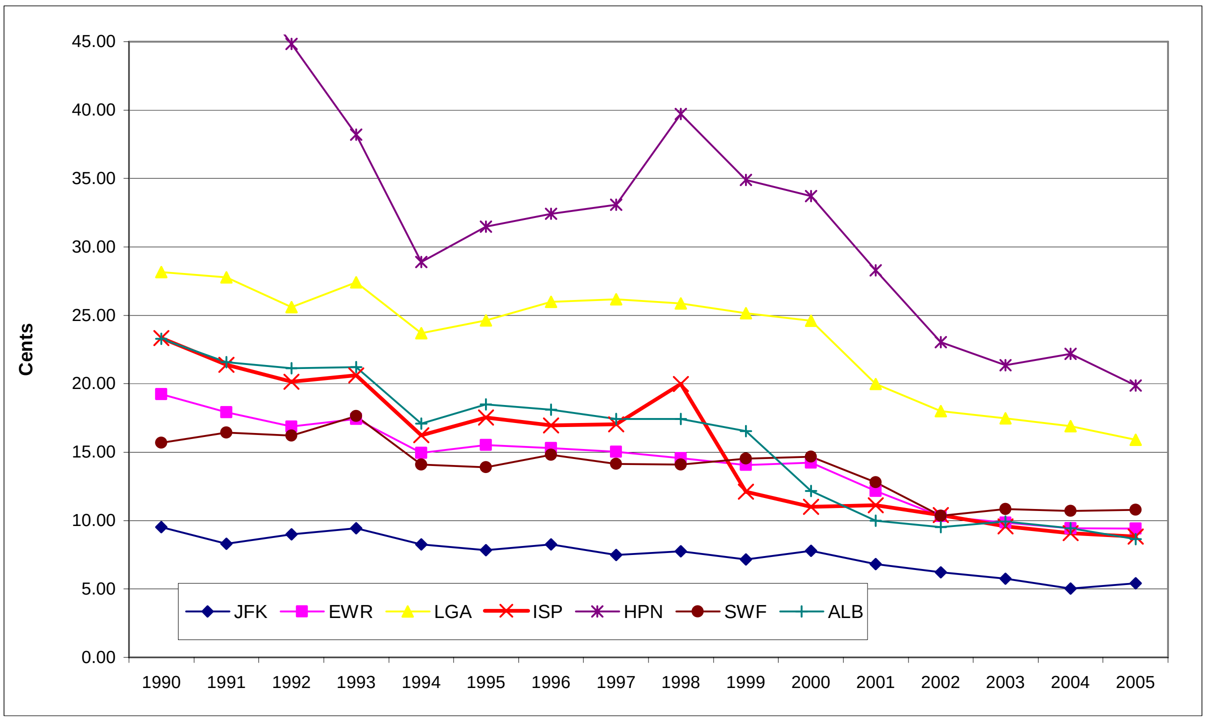
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\[NYSDOT Apts OAG Sched Aug-95-00-05-06.xls]ISP Air Service

IV.3 AIRPORT COMPETITION

Potential travelers make air travel decisions based primarily on the following three factors: (1) availability of air service, (2) price, and (3) distance of airport from point of trip origin/destination. Potential air travelers will typically select the closest airport if all other selection factors are equal. Conversely, a better set of air service options at more competitive prices will cause travelers to select airports which are not necessarily the closest to where their trip begins or ends. Due to the proximity of many of the airports in this study the potential for passenger leakage or capture at a given airport is relatively high.

ISP primarily competes with LGA and JFK for passenger traffic. As **Exhibit IV-3** shows, the average fare paid at ISP is relatively competitive with other airports within close geographic proximity. Indeed, of the airports shown in the exhibit only passengers traveling to and from JFK, and to a lesser extent ALB, paid lower fares, on average, in 2005.

Exhibit IV-3
DISTANCE ADJUSTED FARE YIELD PER 1,000 MILE TRIP
(cents per mile; in 2005 dollars)



Source: DOT, *Air Passenger Origin-Destination Survey.*
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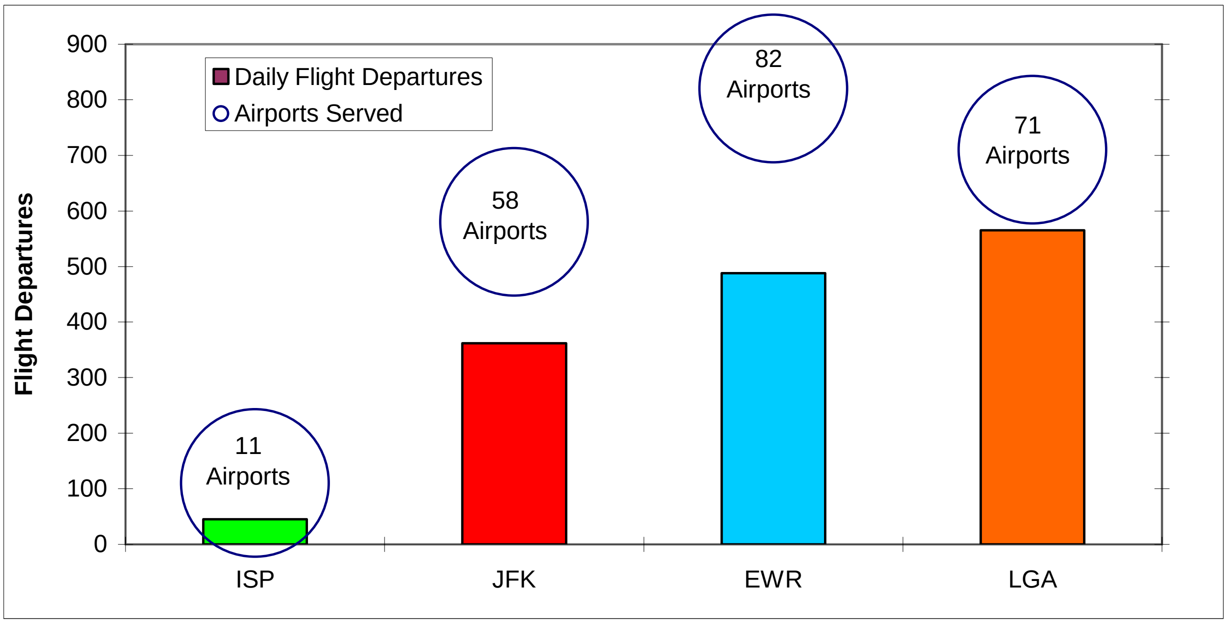
Exhibit IV-4 summarizes daily domestic frequencies and number of airports served at ISP versus the three Port Authority airports.

Exhibit IV-4
DAILY FLIGHT DEPARTURES AND AIRPORTS SERVED
ISP AND SELECT COMPETING AIRPORTS
(August 10, 2006)



Source: *Official Airline Guide.*
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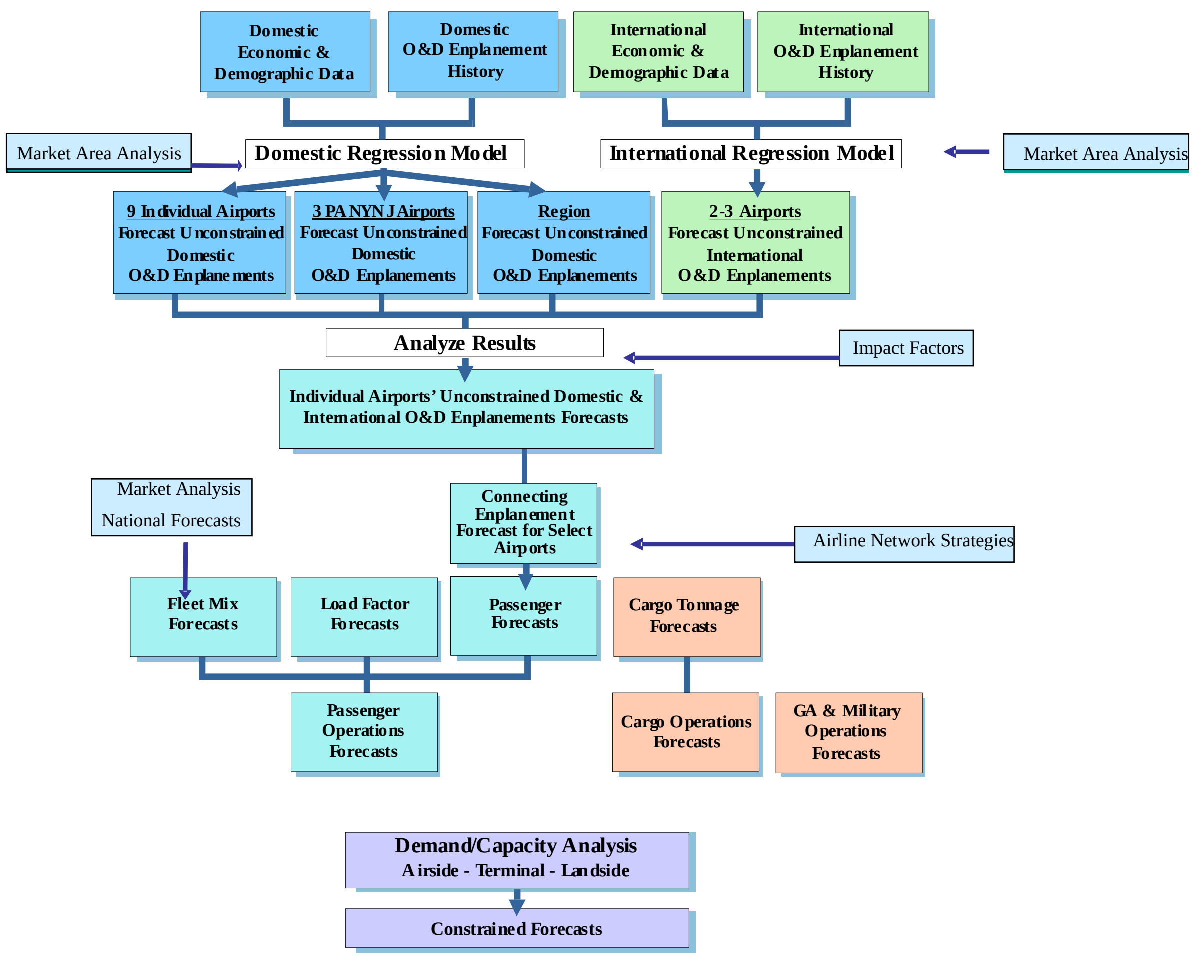
V. FORECASTING METHODOLOGY AND ASSUMPTIONS

This section describes the methodology and assumptions used to develop the forecasts for ISP.

V.1 METHODOLOGY

Exhibit V-1 summarizes the overall methodology used to develop the baseline forecasts of aviation demand for all nine airports in the Regional Air Service Demand Study. Development of the forecasts for ISP, SWF, and HPN followed this overall approach, but were less dependent on regression analysis for the enplanement forecast. First, historical and forecast demographic and socioeconomic data was collected and analyzed as described in Section III. A 20-year history of traffic and yields at each airport was also reviewed and analyzed.

Exhibit V-1
FORECAST METHODOLOGY FLOWCHART



Source: Landrum & Brown

Historical scheduled passenger traffic was examined in light of the variables discussed in Section III. A multi-linear regression model was used to quantify the relationship between the variable being forecast (local passengers) and the independent variables. The regression model was used to project origin and destination (O&D) demand for ISP. The model was not able to generate sufficient correlation between historical traffic volumes and the independent variables for SWF and HPN. None of the NYSDOT airports has a significant level of connecting passengers.

Forecasts of operations were developed from the enplaned passenger traffic forecasts. Since carriers have a wide choice of aircraft and experience different load factor levels, many different volumes of operations can correspond to one set of passenger forecasts. The forecasts of operations were developed from information about airline fleet plans, scheduling strategies at downline hubs, current and projected load factors, and assumptions about mergers and competitive strategies.

V.2 O&D PASSENGER FORECAST MODELS

Twenty-one years of historical originating enplaned passengers was used to forecast demand at ISP. The forecast model was developed using the classical technique of multi-linear regression, with the dependent variable transformed according to a linear function. The methodology for preparing the O&D forecasts recognizes that key parameters such as yield and total personal income will change over time. However, it assumes that the fundamental mathematical *relationships* between the independent variables and domestic O&D passenger traffic will persist and will support the development of realistic forecasts.

Several regressions of various combinations of independent variables were tested. **Table V-1** shows the variables that proved of particular importance in explaining local traffic at ISP.

Table V-1
INDEPENDENT VARIABLES USED IN FINAL ISP O&D FORECAST

Domestic
ISP
Yield
Personal Income
Dummy Variable
International
ISP
Not Applicable

Several different model specifications were tested but ultimately rejected for various reasons, such as:

- Inadequate test statistics (i.e. low r-squares, t-statistics, etc.)
- Poor forecast results. Regression models produce "forecasts" of historical data. A satisfactory model will generate estimates that are close to actual values.
- Theoretical contradictions, (e.g. the model indicates that income is negatively correlated with traffic growth)
- Simple models that do not allow for sensitivity analysis
- Overly aggressive or low forecast results that are incompatible with historical averages

V.3 O&D FORECAST ASSUMPTIONS

In order to forecast originating enplanements at ISP, there are a number of factors that must be taken into consideration as discussed below.

- Facility constraints
- Local yield
- Local socio-economic variables
- Unusual events
- Airline strategy / changes

V.3.1 Facility Constraints

The forecasts developed in this Regional Air Service Demand Study are unconstrained to the extent possible. The enplaned passenger, cargo tonnage, and aircraft operations forecasts are NOT limited to the levels of activity that can be served by the current physical plant at each airport. In other words, possible future capacity constraints are ignored.

V.3.2 Local Yield

Local yield is projected to continue to decline in constant dollar terms as discussed in Section IV. As airline ticket prices decline, passengers can better afford to fly and traffic volumes typically increase.

V.3.3 Local Socio-Economic Variables

Local population, employment, personal income, and various measures of local and regional economic output are projected to continue to grow as discussed in Section IV. A healthy, expanding local economy supports travel by residents of the region and by visitors to the region.

V.3.4 Unusual Events

The terrorist attacks of September 11, 2001, the concurrent prolonged recession, the wars in Afghanistan and Iraq, and the limitations placed on flying due to SARS were all unusual events that occurred in the early part of this century and must be accounted for in the forecast models. Each of these issues had the effect of depressing traffic at U.S. airports and throughout the world that is not fully reflected in the standard socioeconomic variables used to forecast future aviation activity. As a result, a dummy variable was used in the regression models and applied in 2001, 2002, and 2003 to reflect the impact of these unusual events on aviation activity at ISP.

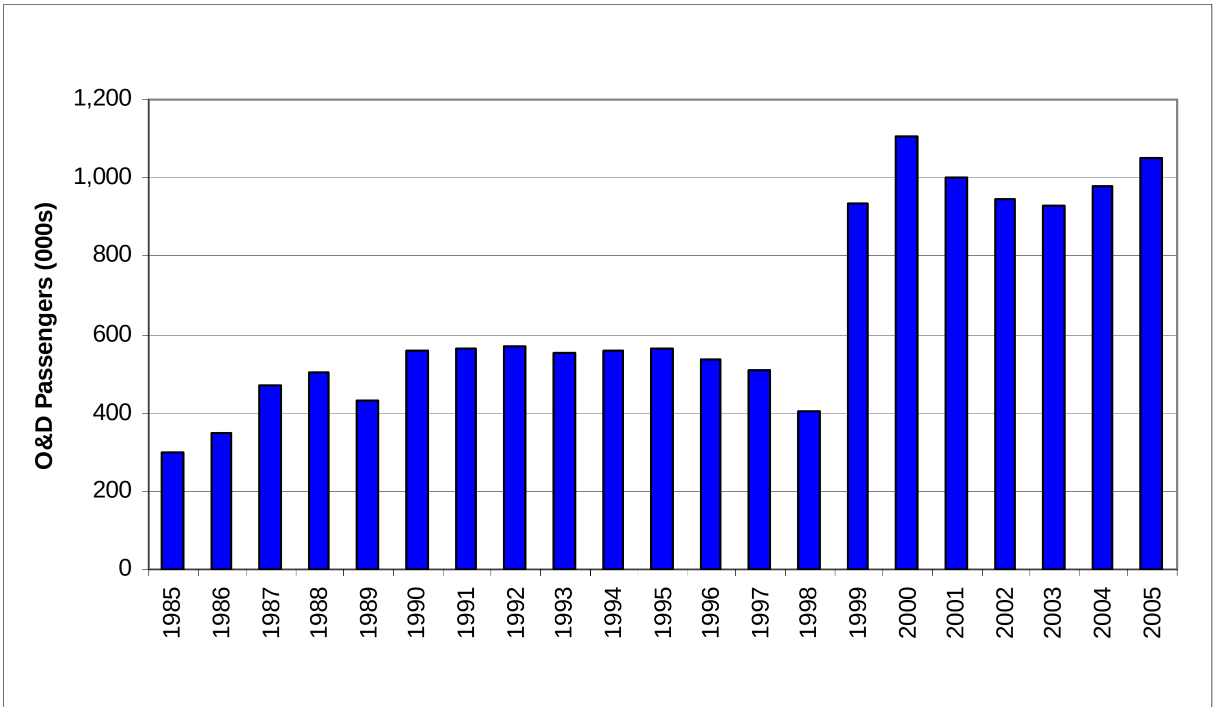
V.3.5 Airline Strategy/Changes

In order to accurately forecast future enplanements, specific airline strategy decisions must be considered and reflected in the forecast. When an LCC introduces service at an airport that does not have a significant LCC presence, the introduction of new and economically priced travel options often results in a few years of rapid growth, after which the market typically stabilizes. **Exhibit V-2** shows the impact on domestic O&D traffic of Southwest introducing service at ISP in March 1999. From 1998 to 2005, domestic originations were up 162 percent in total while fares were down 32 percent.

The dummy variable discussed previously was also used to account for these types of airline changes at ISP. Specifically, the dummy variable was used to reflect:

- The discontinuation of service in 1998 by AirTran and PanAm
- The startup of Southwest in 1999 and continued expansion through 2006 and beyond

Table V-2
SOUTHWEST IMPACT ON ISP DOMESTIC O&D TRAFFIC



Sources: U.S. DOT T100 and Landrum & Brown Analysis

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VI. ENPLANED PASSENGERS FORECASTS

This section provides summaries of the forecasts of passenger demand at ISP. The forecast of passenger traffic is the most critical of the various aviation demand elements since most of the other activity elements, such as aircraft operations, are derived from this forecast.

Any comprehensive effort to project future airline passengers begins with a forecast of originating enplaned passengers. The level of originating passengers reflects the attractiveness of the region as a place to live, a place to visit, and as a place to work and conduct business. An accurate forecast of originating passengers is critical in order to estimate future demands for such terminal facilities as ticketing, baggage claim, automobile parking, and access roadways.

It is important to note that most enplaned passengers at ISP are domestic originating passengers. Scheduled international service is nonexistent at the airport. Airlines provide spoke and point-to-point service at the airport and therefore only a hand full of connections are made at ISP during each year. Therefore total enplanements are used as an accurate estimate of O&D enplanements for the airport.

Three forecasts were developed for ISP. A base case forecast was derived based on a continuation of the airport's current role and represents unconstrained growth. Optimistic and pessimistic enplanement forecasts were also developed to demonstrate the likely range of activity that can be expected at ISP over the 20-year planning horizon.

VI.1 ENPLANED PASSENGERS

The forecast for ISP enplaned passengers, segregated into air carrier and commuter categories, is summarized in **Table VI-1**. In the base case, enplanements will experience organic growth in direct relationship with the region's economy. Total enplanements at the airport are forecast to increase from 1.1 million in 2005 to 1.6 million in 2025. This represents two percent annual average growth during the period. Air carrier enplanements growth, namely Southwest, is expected to drive total enplanements with a projected growth rate of 2.4 percent annually. In contrast, net commuter enplanements are expected to see a decline during the 20-year period from just over 150,000 enplanements in 2005 to 108,800 in 2025. This constitutes an average yearly decline of 1.6 percent for the forecast period. All of this decline will occur during 2006 and 2007 when enplanements will decrease by 26 percent and 17 percent respectively.

Table VI-1
ISP ENPLANED PASSENGER FORECAST

	Calendar Year	Enplanements Air Carrier	Enplanements Commuter	Total Enplanements
Historical	1995	397,682	170,247	567,929
	2000	890,601	229,232	1,119,833
	2005	904,993	150,510	1,055,503
Estimate	2006	1,026,673	111,320	1,137,993
Forecast	2007	1,064,200	92,500	1,156,700
	2008	1,082,400	93,400	1,175,800
	2009	1,100,800	94,300	1,195,100
	2010	1,119,600	95,200	1,214,800
	2011	1,138,700	96,100	1,234,800
	2012	1,158,300	96,900	1,255,200
	2013	1,178,200	97,800	1,276,000
	2014	1,198,300	98,700	1,297,000
	2015	1,218,800	99,600	1,318,400
	2020	1,327,300	104,200	1,431,500
	2025	1,446,200	108,800	1,555,000
	Average Annual Growth Rates			
	1995-2005	8.6%	-1.2%	6.4%
	2005-2015	3.0%	-4.0%	2.2%
	2015-2025	1.7%	0.9%	1.7%
	2005-2025	2.4%	-1.6%	2.0%

Sources: U.S. DOT T100; T3 and Landrum & Brown Analysis
Note: Air Carrier includes charter enplanements
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Enpax Tables

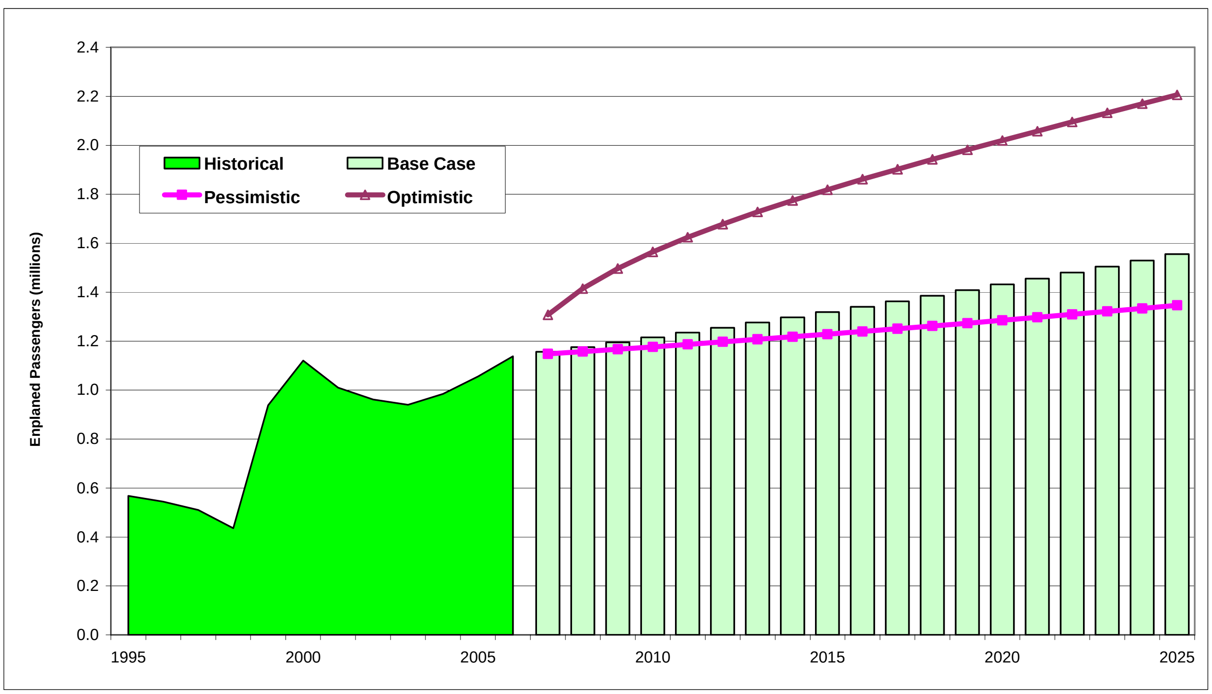
VI.2 ENPLANED PASSENGERS – OPTIMISTIC & PESSIMISTIC SCENARIOS

Two sensitivity scenarios were developed for the ISP enplanement forecast. The optimistic enplanement scenario is based on Southwest Airlines' potential for expansion. The carrier currently has an eight-gate facility at the airport but only utilizes four gates for its operations. The addition of new service can be expected as early as 2007. With improved service, ISP will be able to recapture some of the leakage from surrounding airports, resulting in an additional 650,000 enplanements by 2025. This will increase total enplanements at the airport to 2.2 million by the end of the forecast period, representing average annual growth of 3.8 percent.

On the other hand, the low enplanement scenario is based primarily on lower economic growth in the region with no changes to price or service. Lower economic growth would result in 1.3 million total enplanements by 2025, which represents average growth of 1.2 percent annually.

Exhibit VI-1 and **Table VI-2** summarize the base case, optimistic and pessimistic enplanement forecasts and underlying assumptions at ISP.

Exhibit VI-1
ISP ENPLANED PASSENGER FORECAST SCENARIOS



Source: Landrum & Brown Analysis
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Table VI-2
ISP ENPLANED PASSENGER FORECAST SCENARIOS

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	567,929		
	2000	1,119,833		
	2005	1,055,503		
Estimate	2006	1,137,993		
Forecast	2007	1,156,715	1,307,311	1,147,354
	2008	1,175,756	1,414,446	1,156,874
	2009	1,195,116	1,496,309	1,166,554
	2010	1,214,795	1,564,470	1,176,394
	2011	1,234,794	1,624,080	1,186,393
	2012	1,255,217	1,677,996	1,196,605
	2013	1,275,960	1,727,750	1,206,977
	2014	1,297,023	1,774,403	1,217,508
	2015	1,318,404	1,818,675	1,228,198
	2020	1,431,480	2,019,844	1,284,736
	2025	1,554,980	2,205,848	1,346,487
Average Annual Growth Rates				
	1995-2005	6.4%		
	2005-2015	2.2%	5.6%	1.5%
	2015-2025	1.7%	1.9%	0.9%
	2005-2025	2.0%	3.8%	1.2%

Source: Landrum & Brown Analysis
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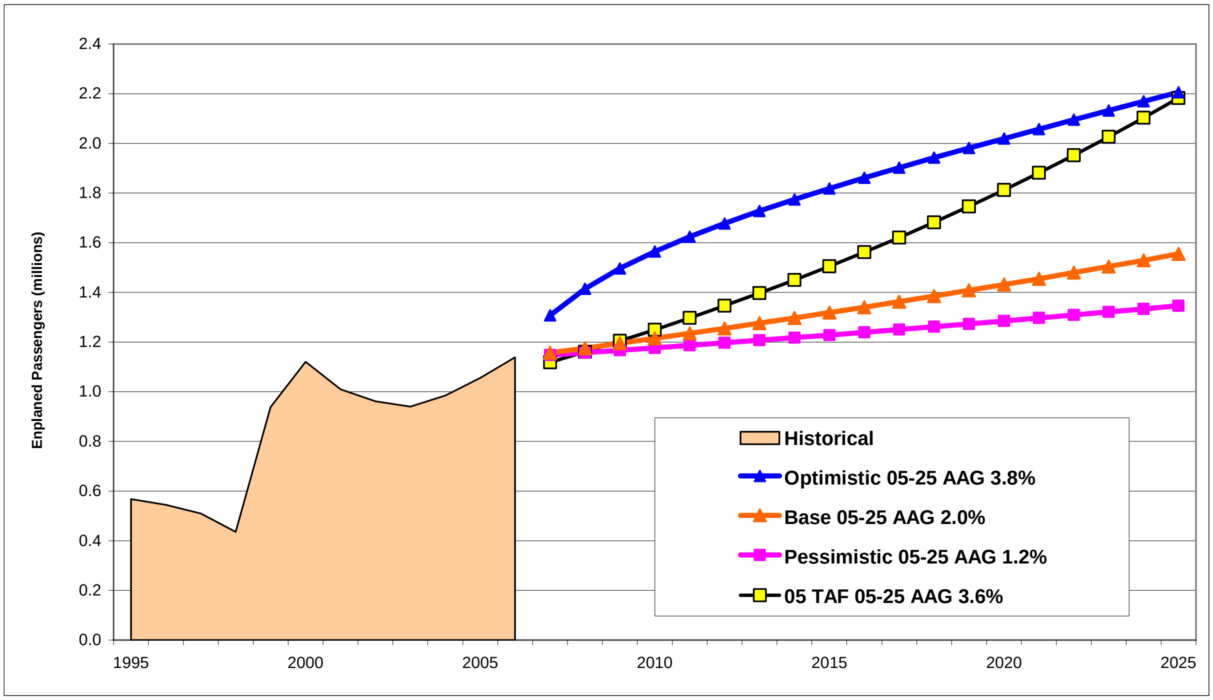
VI.3 COMPARISON OF FORECAST RANGE TO FAA 2005 TAF

Exhibit VI-2 provides a comparison of the three enplaned passenger forecasts developed for this study to the FAA Terminal Area Forecasts (TAF). The TAF projects much more robust growth compared to the base case for ISP. The optimistic enplanement forecast grows faster in the initial years but slows down and approximately equals the TAF in 2025.

Exhibit VI-2
ISP ENPLANED PASSENGER FORECASTS & 2005 TAF



Sources: FAA TAF; Landrum & Brown Analysis
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VII. AIRCRAFT OPERATIONS FORECAST

The forecast of aircraft operations consists of projections of operations activity by major activity type at ISP. Aircraft operations, defined as arrivals plus departures, were forecasted separately for the five major categories of users including: (1) Commercial Passenger; (2) All-Cargo/Freighter; (3) Non-commercial Air Taxi; (4) General Aviation; and (5) Military.

VII.1 PASSENGER OPERATIONS

Passenger aircraft operations were derived from the enplaned passenger forecast. The aggregate number of commercial operations at an airport depends on three factors; total passengers, average aircraft size, and average load factor (percent of seats occupied). The relationship is shown in the equation below.

$$Operations = \frac{TotalPassengers}{AverageLoadFactor * AverageAircraftSize}$$

This relationship permits literally infinite combinations of load factors, average aircraft size, and operations to accommodate a given number of passengers. In order to develop reasonable load factor and aircraft gauge assumptions, commercial passenger operations were disaggregated into the same categories of activity as in the enplaned passenger forecast (i.e. air carrier and regional activity).

The breakout of commuter service is based on the individual carrier's mode of operation (i.e., providing regional feed to its major airline partners) and certification with the FAA. These commuter carriers typically operate turboprop and small (less than 70 seat) jet equipment.

The fundamental approach to deriving the passenger operations forecast is identical for each of the NYSDOT airports. However, the underlying assumptions at each airport are inherently different due to numerous factors such as airline concentration, airline business models, and capacity limitations.

A number of sources were used to develop the historical passenger operations, load factor, and aircraft gauge data. The *Official Airline Guide,* FAA ATADS and U.S. Department of Transportation (USDOT), Schedule T-100 data was used to develop total departures and seats for each segment. Average Seats per Departure (ASPD) for each of the major groups of passenger activity was calculated from total departures and total departing seats. Assumptions for ASPD had to be formulated for early years where seat data was not available. Aircraft load factors were calculated for each group of passenger operations by dividing total enplaned passengers by total departing seats. To calculate total operations, the total number of departures was multiplied by a factor of two.

ISP experienced a 0.5 percent average annual decline in commercial passenger operations from 34,802 in 1995 to 33,119 in 2005.

Air Carrier Operations

Air carrier operations grew at an average of eight percent per year between 1995 and 2005, increasing from 9,256 operations to 19,932 operations. The increase in air carrier activity over the ten-year period has been driven entirely by Southwest, with carriers such as US Airways, Delta and American all discontinuing mainline service at ISP. In fact, Southwest has been the sole provider of scheduled passenger air carrier activity at ISP since 2004.

In 2005, ASPD for the air carrier category was 137 seats per flight, reflecting the Boeing 737-300/700 aircraft that Southwest operates (see **Table VII-1**).

Table VII-1
ISP AIRCRAFT GAUGE AND LOAD FACTOR ASSUMPTIONS

		Air Carrier			Regional		
	Calendar Year	ASPD	Load Factor	Enpl./ Dep.	ASPD	Load Factor	Enpl./ Dep.
Actual	1995	133.3	64.5%	85.9	26.0	51.3%	13.3
	2000	133.9	67.1%	89.9	35.8	58.4%	20.9
	2005	136.9	66.3%	90.8	37.2	61.3%	22.8
Estimate	2006	137.0	67.0%	91.8	38.2	67.0%	25.6
Forecast	2007	137.0	67.3%	92.1	39.2	67.2%	26.3
	2008	137.0	67.5%	92.5	40.1	67.3%	27.0
	2009	137.0	67.8%	92.8	41.1	67.5%	27.7
	2010	137.0	68.0%	93.2	42.1	67.6%	28.4
	2011	137.0	68.3%	93.5	43.1	67.8%	29.2
	2012	137.0	68.5%	93.9	44.1	67.9%	30.0
	2013	137.0	68.8%	94.3	45.1	68.1%	30.7
	2014	137.0	69.1%	94.6	46.2	68.2%	31.6
	2015	137.0	69.3%	95.0	47.3	68.4%	32.4
	2020	137.0	70.6%	96.8	53.3	69.2%	36.9
	2025	137.0	72.0%	98.6	60.0	70.0%	42.0
Average Annual Growth Rates							
	1995-2005	0.3%	0.3%	0.6%	3.7%	1.8%	5.5%
	2005-2015	0.0%	0.4%	0.4%	2.4%	1.1%	3.6%
	2015-2025	0.0%	0.4%	0.4%	2.4%	0.2%	2.6%
	2005-2025	0.0%	0.4%	0.4%	2.4%	0.7%	3.1%

Source: Landrum & Brown Analysis
Notes: ASPD = average seats per departure (gauge); load factor = average percentage of seats filled; Enpl / Dep = enplanements per departure
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Tables

Southwest currently has no plans to diversify its single plane fleet and only has orders for next generation Boeing 737-700 aircraft. Consequently, it is assumed that ASPD will remain at 137 seats during the forecast period. Implicitly, the air carrier operations forecast assumes that no other airline will provide a significant volume of air carrier service at ISP, over the forecast period.

Air carrier load factors have also increased over the past ten years, from 64.5 percent to 66.3 percent. Although Southwest has historically operated at lower load factors than most of its domestic mainline competitors, its load factors have increased in recent years as it makes more effective use of its aircraft assets as part of an effort to mitigate increased operating costs. This trend is expected to continue over the forecast period with air carrier load factors projected to reach 72 percent by 2025.

The result of the foregoing assumptions regarding load factor and ASPD is that air carrier operations are forecast to grow from 19,932 operations in 2005 to 29,320 operations by 2025, representing average annual growth of 1.9 percent.

Commuter Operations

Commuter operations at ISP declined from 25,550 in 1995 to 13,200 in 2005; an annual average decrease of 6.4 percent. Over the 10-year period, ASPD for commuter carriers increased from 26 seats to 37 seats, reaching a high of 41 in 2003. A shift from small 19- to 37-seat turboprop aircraft to larger 50-seat turboprops and 50-seat regional jets accounted for this increase. The trend toward larger aircraft is expected to continue as commuter carriers look to reduce unit costs by spreading operating costs over a greater number of seats per flight. It is also expected that more flexible scope clauses will also help regional airlines operate larger regional aircraft in the future. Consequently, commuter aircraft gauge is expected to increase to 60 seats per departure by 2025.

Commuter load factors at ISP have, in most years, been lower than air carrier load factors. However, data for the first quarter of 2006 suggests that load factors for the two segments will be approximately equal for the year. It is assumed that regional load factors will continue to grow during the forecast period, albeit at a slower rate than air carrier load factors. Accordingly, regional load factors are projected to reach 70 percent by 2025.

Based on the projected commuter ASPD and load factor assumptions, commuter operations are expected to decline at an average of 4.6 percent per year during the forecast period and reach 5,180 operations by 2025. It should be noted that much of the decline in commuter operations is accounted for in 2006, as regional airlines continue to cut service at ISP. Current schedule filings with the OAG suggest commuter operations at ISP will decline almost 35 percent in 2006 versus 2005.

Commercial Passenger Fleet Mix

Once the aggregate level operations forecasts were developed for air carrier and commuter activity, a top-down approach was employed to allocate these operations to aircraft groups and specific aircraft types. The fleet mix was developed to match the aggregate level ASPD targets for air carrier and commuter categories presented in the previous subsections. However, the fleet mix also allowed for the calibration of those assumptions and, where appropriate, modifications were made prior to finalizing the assumptions presented above.

In the air carrier segment, only narrow-body jets were operated during the historical analytic period. This is not expected to change in the foreseeable future, as no new air carriers are expected to initiate service at the airport. The only airline in the air carrier category, Southwest Airlines, has a single aircraft type (Boeing 737).

Commuter operations were segmented into three primary aircraft groups: (1) large regional jet aircraft, (2) small regional jet aircraft, and (3) turboprop aircraft. Large regional jet aircraft are defined as those with a seating configuration of greater than 50 seats and less than 85 seats. Examples include the 70-seat Embraer-170 regional jet and the 70-seat Canadair-700. Small regional jets typically range from 37-seat aircraft such as the Embraer-135 to the 50-seat Canadair regional jet. Turboprop aircraft are simply defined as all commuter propeller driven (i.e., non-jet) aircraft. The size of turboprop aircraft at ISP range from 19-seat Beech1900s to DHC8-300 aircrafts with 50 seats.

The allocation of commercial passenger operations by aircraft type is shown in **Table VII-2**. The primary assumptions underpinning the fleet mix forecast are:

- Narrow-body Boeing 737-700 aircraft will account for all air carrier operations at ISP.
- Large regional jet aircraft initiated service at the airport in 2005. Although OAG schedules do not indicate large regional jet operations in 2006, it is assumed that the operating advantages of these aircraft over smaller regional jets will make these aircraft increasingly attractive to commuter airlines and their mainline partners. For this reason, where routes, scope clauses, and frequency permit, large jet operations are expected to grow.
- The recent cessation of production of the 50-seat Canadair Regional Jet by Bombardier is indicative of the changing fortunes for small regional jet aircraft. Although there was slight increase in small regional jet share from 2000 to 2005, OAG schedules suggests a sharp decline in 2006. Nevertheless, the share of this segment is expected to increase in the next 15 years but then moderate by 2025 as airlines shift to larger regional jet aircraft.

Table VII-2
ISP COMMERCIAL PASSENGER OPERATIONS—FLEET MIX

Aircraft Type	Aircraft Model	Acft. Gauge	Aircraft Operations 2000	2005	2006	2010	2015	2020	2025	% of Total Aircraft Operations 2000	2005	2006	2010	2015	2020	2025
Narrow Body Jet																
	73G	137	12,253	19,932	22,370	24,030	25,670	27,430	29,320	29.3%	60.2%	72.0%	78.2%	80.7%	82.9%	85.0%
	73S	115	4,608	-	-	-	-	-	-	11.0%	-	-	-	-	-	-
	D9S	110	875	-	-	-	-	-	-	2.1%	-	-	-	-	-	-
	M80	144	1,789	-	-	-	-	-	-	4.3%	-	-	-	-	-	-
	M87	133	299	-	-	-	-	-	-	0.7%	-	-	-	-	-	-
			19,824	**19,932**	**22,370**	**24,030**	**25,670**	**27,430**	**29,320**	**47.5%**	**60.2%**	**72.0%**	**78.2%**	**80.7%**	**82.9%**	**85.0%**
Large Regional Jet																
	CR7/E70	**70**	**-**	**173**	**-**	**201**	**615**	**1,356**	**2,383**	**-**	**0.5%**	**-**	**0.7%**	**1.9%**	**4.1%**	**6.9%**
Small Regional Jet																
	CRJ/ERJ	50	5,101	4,282	2,177	2,278	2,768	2,882	2,538	12.2%	12.9%	7.0%	7.4%	8.7%	8.7%	7.4%
	ER3	37	292	422	-	-	-	-	-	0.7%	1.3%	-	-	-	-	-
			5,393	**4,704**	**2,177**	**2,278**	**2,768**	**2,882**	**2,538**	**12.9%**	**14.2%**	**7.0%**	**7.4%**	**8.7%**	**8.7%**	**7.4%**
Turboprop																
	BE1	19	4,086	3,996	2,076	1,097	554	170	-	9.8%	12.1%	6.7%	3.6%	1.7%	0.5%	-
	DH3	50	253	1,169	1,870	1,646	1,439	890	207	0.6%	3.5%	6.0%	5.4%	4.5%	2.7%	0.6%
	DH8	37	4,520	2,632	1,964	1,055	554	283	52	10.8%	7.9%	6.3%	3.4%	1.7%	0.9%	0.2%
	SF3	34	7,223	513	601	422	221	71	-	17.3%	1.5%	1.9%	1.4%	0.7%	0.2%	-
	SH6	36	451	-	-	-	-	-	-	1.1%	-	-	-	-	-	-
			16,533	**8,310**	**6,511**	**4,221**	**2,768**	**1,413**	**259**	**39.6%**	**25.1%**	**21.0%**	**13.7%**	**8.7%**	**4.3%**	**0.8%**
Total—All Aircraft			**41,750**	**33,119**	**31,058**	**30,730**	**31,820**	**33,080**	**34,500**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Sources *Official Airline Guide;* Landrum & Brown, Inc.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Fleet Mix.XLS]Fleet Summary

- The share of turbo prop operations have declined at the airport from almost 40 percent of commercial passenger operations in 2000 to 21 percent projected for 2006. This trend is expected to continue over the forecast period, with turboprop operations expected to account for just one percent of total passenger operations by 2025.

Summary of Commercial Passenger Operations

Table VII-3 presents the forecast of operations for each of the primary components of passenger activity at ISP. OAG schedules indicate that commercial passenger operations at ISP will decline in 2006 due to a sharp decline in commuter operations. Nevertheless, total passenger operations are expected to grow slightly during the 20-year forecast period from 33,119 in 2005 to 34,500 by 2025, representing an average annual rate of 0.2 percent. Air carrier operations will drive total passenger operations growth over the forecast period, averaging 1.9 percent per year, offsetting the projected decline in commuter activity.

Table VII-3
ISP FORECAST OF TOTAL PASSENGER OPERATIONS

	Calendar Year	Passenger Air Carrier	Passenger Commuter	Total Passenger
Actual	1995	9,256	25,546	34,802
	2000	19,824	21,926	41,750
	2005	19,932	13,187	33,119
Estimate	2006	22,370	8,688	31,058
Forecast	2007	23,100	7,030	30,130
	2008	23,410	6,920	30,330
	2009	23,710	6,810	30,520
	2010	24,030	6,700	30,730
	2011	24,350	6,590	30,940
	2012	24,670	6,470	31,140
	2013	25,000	6,360	31,360
	2014	25,330	6,260	31,590
	2015	25,670	6,150	31,820
	2020	27,430	5,650	33,080
	2025	29,320	5,180	34,500
Average Annual Growth Rates				
	1995-2005	8.0%	-6.4%	-0.5%
	2005-2015	2.6%	-7.3%	-0.4%
	2015-2025	1.3%	-1.7%	0.8%
	2005-2025	1.9%	-4.6%	0.2%

Sources: *Official Airline Guide;* DOT, Schedule T-100; FAA ATADS.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

VII.2 ALL-CARGO OPERATIONS FORECAST

Airline data reported on DOT, Schedule T100 reports suggest there was not any scheduled all-cargo activity at the airport until FedEx initiated service in 2005 using Cessna 208 aircraft. The FAA, Enhanced Traffic Management System Counts (ETMSC) system recorded a small amount of adhoc freighter activity prior to 2005. Data for the first quarter of 2006 shows a slight increase in FedEx activity compared to the previous year. Virtually all the air cargo in the New York region is handled at the Port Authority airports, which have highly developed inter-modal cargo facilities. As a result, freighter operations at the airport are expected to remain relatively unchanged over the forecast period (see **Table VII-4)**. It is also assumed that the all-cargo fleet of turboprop (C208) aircraft will not change materially at ISP.

Table VII-4
ISP ALL-CARGO OPERATIONS FORECAST

	Calendar Year	All-Cargo
Actual	1995	502
	2000	522
	2005	284
Estimate	2006	520
Forecast	2007	520
	2008	520
	2009	520
	2010	520
	2011	520
	2012	520
	2013	520
	2014	520
	2015	520
	2020	520
	2025	520
Average Annual Growth Rates		
	1995-2005	-5.5%
	2005-2015	6.2%
	2015-2025	0.0%
	2005-2025	3.1%

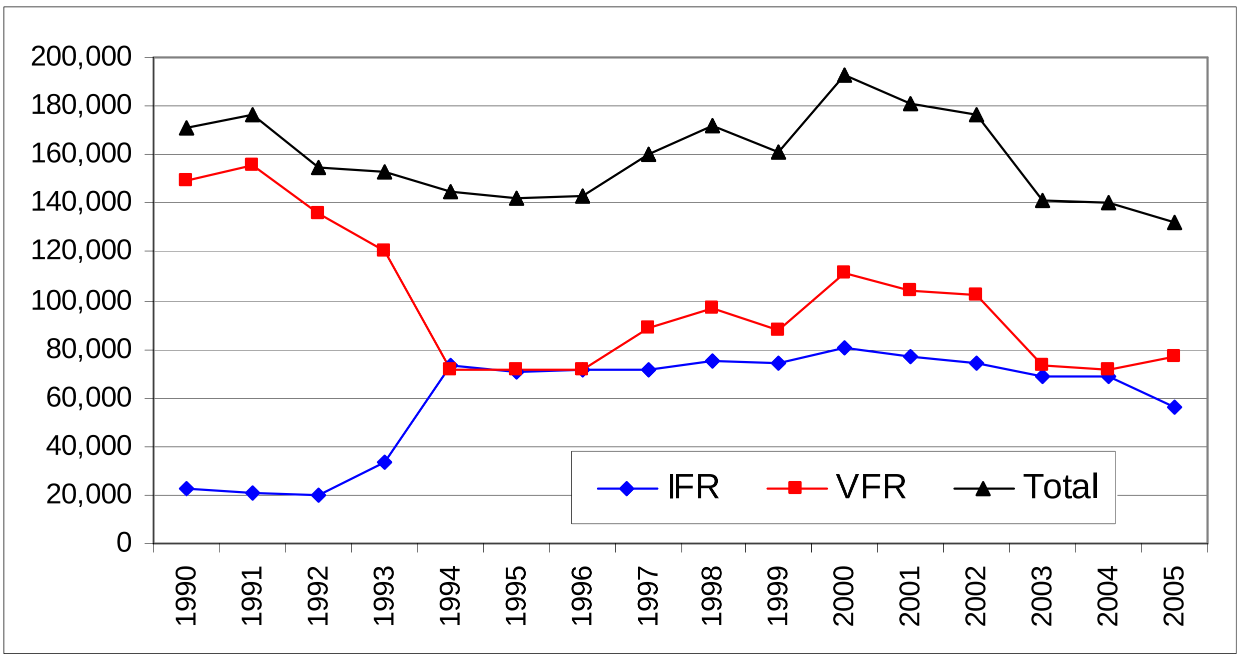
Sources: FAA ATADS; Landrum & Brown, Inc.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

VII.3 GENERAL AVIATION OPERATIONS

This section summarizes the annual general aviation operations forecasts for ISP. According to the FAA, "the term general aviation is used to describe a diverse range of aviation activities and includes all segments of the aviation industry except commercial air carriers (including commuter/regional/freighter airlines) and military."[1]

Airport radar data was not available to develop a complete general aviation fleet mix for ISP. Therefore Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) operations at the airport were examined to obtain a basic understanding of the general aviation fleet (see **Exhibit VII-1**). Generally large corporate and business jets make instrument (IFR) approaches. Smaller privately owned piston and turbo prop aircraft are more likely to conduct visual (VFR) approaches. In the early 1990s, ISP had a relatively high percentage of VFR operations compared to IFR operations. Since the mid nineties, however, the share of VFR and IFR operations at the airport has been approximately equal. This suggests that the general aviation activity at ISP is an equal mix of large business jet aircrafts and small turbo prop/piston aircrafts.

Exhibit VII-1
ISP GENERAL AVIATION FLEET PROFILE



Sources: FAA ATCT counts and Landrum & Brown.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\[HPN ISP SWF Instrument Ops Analysis.xls]ISP

[1] FAA Aerospace Forecasts, Fiscal Years 2005-2016.

Table VII-5 presents the general aviation operations forecast for ISP. While there has been no consistent pattern of growth in general aviation activity at the airport between 1995 and 2005, general aviation activity has mirrored broader national trends. In 2005, general aviation accounted for 78 percent of operations activity at the airport. Based on FAA, Air Traffic Activity System (ATADS) data for the first quarter of 2006, general aviation operations should increase sharply for the full year (up 14 percent compared to 2005). Thereafter, general aviation activity is expected to average long term growth of approximately one percent per year at ISP, which is in line with the current long-term FAA forecast for national general aviation activity.

Table VII-5
ISP FORECAST OF GENERAL AVIATION OPERATIONS

	Calendar Year	General Aviation
Actual	1995	142,284
	2000	191,584
	2005	132,514
Estimate	2006	151,070
Forecast	2007	154,090
	2008	157,170
	2009	160,310
	2010	163,520
	2011	165,160
	2012	166,810
	2013	168,480
	2014	170,160
	2015	171,860
	2020	180,630
	2025	189,840
Average Annual Growth Rates		
	1995-2005	-0.7%
	2005-2015	2.6%
	2015-2025	1.0%
	2005-2025	1.8%

Sources: FAA ATCT counts and Landrum & Brown.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

VII.4 NON-COMMERCIAL AIR TAXI OPERATIONS

This section summarizes the annual non-commercial air taxi operations forecasts for ISP. The non-commercial air taxi category represents operations on chartered aircraft operated by companies who operate under Part 91 (i.e. not certificated as an air carrier by the FAA and not covered under Part 121). Non-commercial air taxi operations at ISP have increased slightly (by 0.3 percent annually) over the previous 10 years, from 2,200 in 1995 to 2,280 in 2005. The FAA projects that this category of operations will increase faster than general aviation activity. Therefore, this forecast projects non-commercial air taxi operations will increase at an average annual rate of 3.6 percent to 4,600 annual operations in 2025. **Table VII-6** shows the resulting non-commercial air taxi operations forecast.

Table VII-6
ISP FORECAST OF NON-COMMERCIAL AIR TAXI OPERATIONS

	Calendar Year	Non-Comm Air Taxi
Actual	1995	2,220
	2000	300
	2005	2,280
Estimate	2006	2,620
Forecast	2007	2,700
	2008	2,780
	2009	2,860
	2010	2,950
	2011	3,040
	2012	3,130
	2013	3,220
	2014	3,320
	2015	3,420
	2020	3,970
	2025	4,600
Average Annual Growth Rates		
	1995-2005	0.3%
	2005-2015	4.1%
	2015-2025	3.0%
	2005-2025	3.6%

Sources: FAA ATCT counts and Landrum & Brown.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

VII.5 MILITARY OPERATIONS

This section summarizes the annual military operations forecasts at ISP. Historical and forecast military operations are shown in **Table VII-7**.

Table VII-7
ISP FORECAST OF MILITARY OPERATIONS

	Calendar Year	Military Operations
Actual	1995	3,645
	2000	4,083
	2005	2,438
Estimate	2006	2,680
Forecast	2007	2,710
	2008	2,740
	2009	2,770
	2010	2,800
	2011	2,810
	2012	2,820
	2013	2,830
	2014	2,840
	2015	2,850
	2020	2,900
	2025	2,950
Average Annual Growth Rates		
	1995-2005	-3.9%
	2005-2015	1.6%
	2015-2025	0.3%
	2005-2025	1.0%

Sources: FAA ATCT counts and Landrum & Brown.
Filepath:H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

Historically, military operations at ISP made up less than two percent of total aircraft operations. From 1995 to 2005, military operations at the airport have declined by an average of 3.9 percent each year. Nevertheless, data for the first quarter of 2006 shows a slight increase in military operations over the previous year. Military operations are forecast to average growth of one percent per year over the forecast period.

VII.6 TOTAL AIRCRAFT OPERATIONS

Table VII-8 summarizes the total operations forecast for ISP. Historical operations totals were taken from the online FAA, ATADS database. Total operations at the airport are expected to grow at an average of 1.6 percent annually over the forecast period, increasing from 170,635 operations in 2005 to 232,410 operations in 2025.

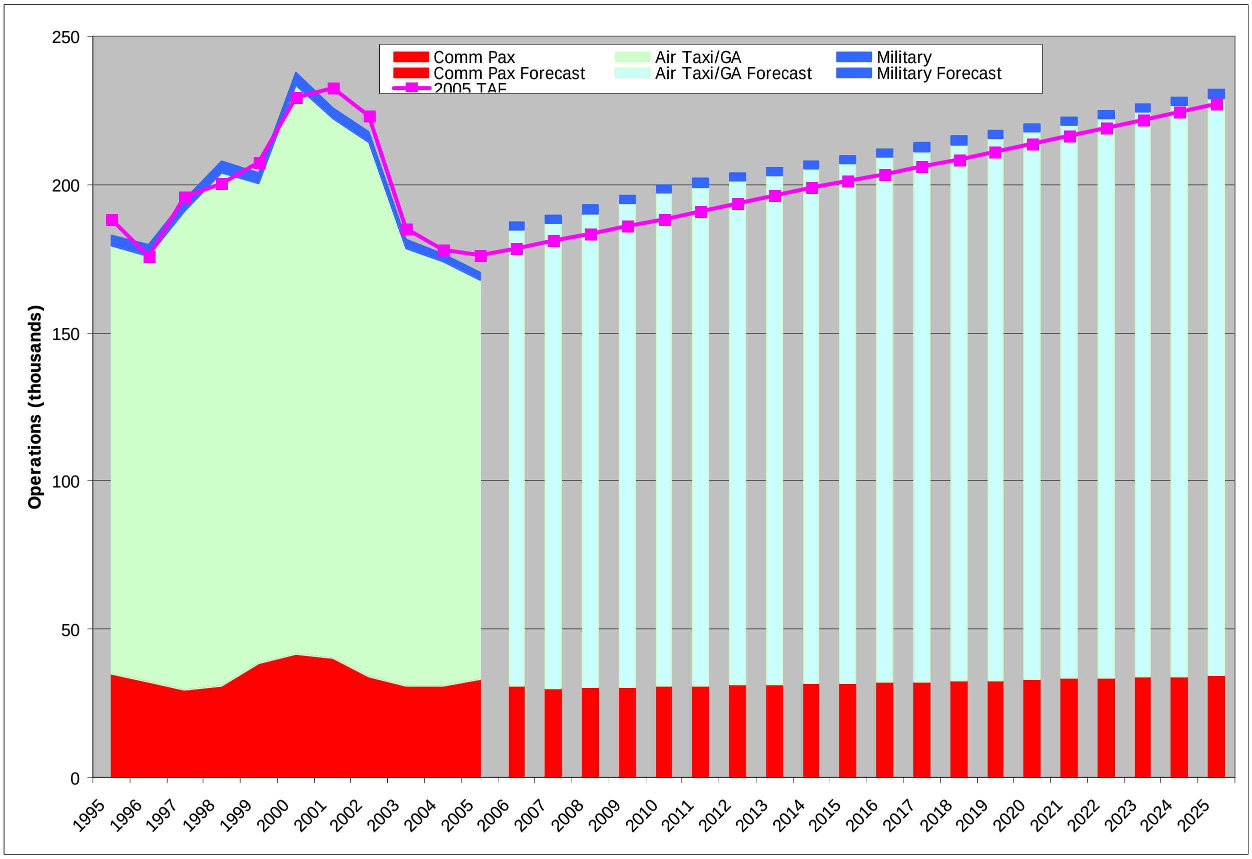
Table VII-8
ISP FORECAST OF TOTAL OPERATIONS

	Calendar Year	Passenger Air Carrier	Passenger Commuter	All-Cargo	Non-Comm Air Taxi	General Aviation	Military	Total
Actual	1995	9,256	25,546	502	2,220	142,284	3,645	183,453
	2000	19,824	21,926	522	300	191,584	4,083	238,239
	2005	19,932	13,187	284	2,280	132,514	2,438	170,635
Estimate	2006	22,370	8,688	520	2,620	151,070	2,680	187,948
Forecast	2007	23,100	7,030	520	2,700	154,090	2,710	190,150
	2008	23,410	6,920	520	2,780	157,170	2,740	193,540
	2009	23,710	6,810	520	2,860	160,310	2,770	196,980
	2010	24,030	6,700	520	2,950	163,520	2,800	200,520
	2011	24,350	6,590	520	3,040	165,160	2,810	202,470
	2012	24,670	6,470	520	3,130	166,810	2,820	204,420
	2013	25,000	6,360	520	3,220	168,480	2,830	206,410
	2014	25,330	6,260	520	3,320	170,160	2,840	208,430
	2015	25,670	6,150	520	3,420	171,860	2,850	210,470
	2020	27,430	5,650	520	3,970	180,630	2,900	221,100
	2025	29,320	5,180	520	4,600	189,840	2,950	232,410
Average Annual Growth Rates								
	1995-2005	8.0%	-6.4%	-5.5%	0.3%	-0.7%	-3.9%	-0.7%
	2005-2015	2.6%	-7.3%	6.2%	4.1%	2.6%	1.6%	2.1%
	2015-2025	1.3%	-1.7%	0.0%	3.0%	1.0%	0.3%	1.0%
	2005-2025	1.9%	-4.6%	3.1%	3.6%	1.8%	1.0%	1.6%

Sources: FAA ATCT counts and Landrum & Brown.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

Exhibit VII-2 summarizes the ISP operations by category. The graph also depicts the expected forecast compared to the FAA, TAF. The forecast is projected to track somewhat higher than the TAF. However, the forecast does not exceed the TAF by more than 6.0 percent in any given year and by 2025 is just 2.2 percent higher.

Exhibit VII-2
ISP OPERATIONS FORECAST VS. FAA TAF



Sources: FAA ATCT counts, TAF and Landrum & Brown.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Graphs

VII.7 TOTAL AIRCRAFT OPERATIONS – SENSITIVITY SCENARIOS

As with the enplanement forecasts, sensitivity scenarios were developed for the operations forecasts. The sensitivity scenarios were developed for commercial passenger activity only. All non-passenger activity remains the same as the base case in both scenarios. As a result, optimistic and pessimistic operations forecasts were derived from the corresponding enplanement forecasts. The pessimistic scenario assumes lower economic growth for the ISP catchment area, resulting in fewer passenger enplanements at the airport. The optimistic scenario assumes service expansion by Southwest Airlines beyond that implicitly assumed in the base case. **Table VII-9** summarizes total operations for the base case and the two sensitivity scenarios.

Table VII-9
ISP BASE, OPTIMISTIC & PESSIMISTIC FORECAST OF TOTAL OPERATIONS

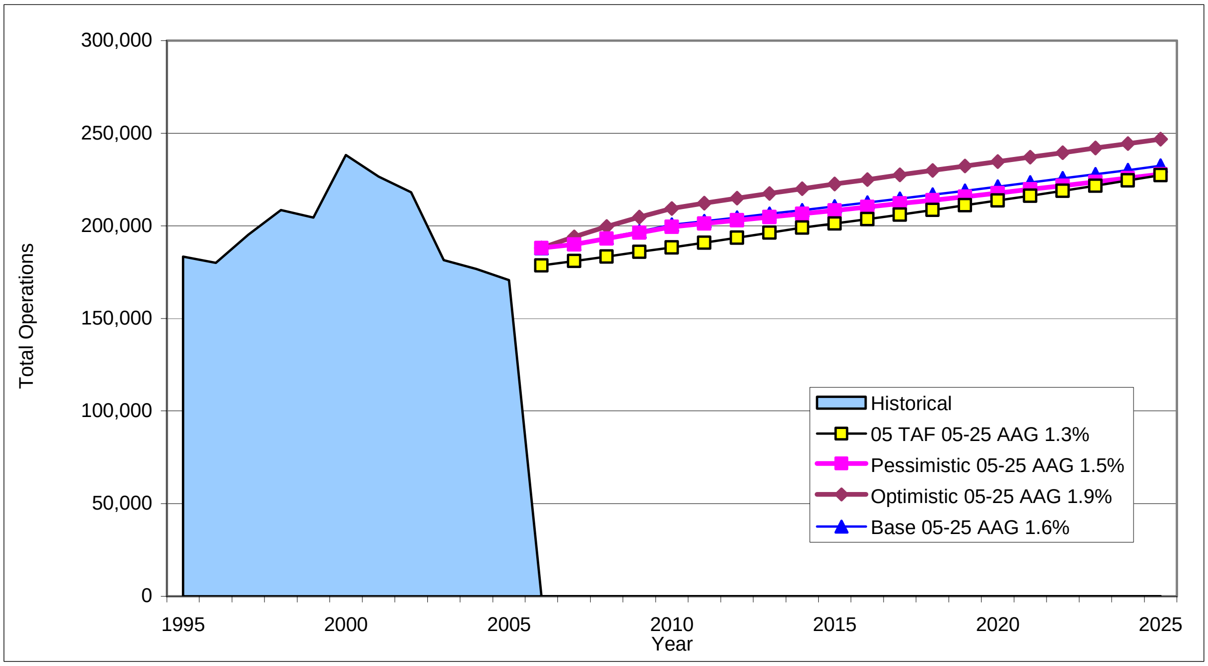
	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	183,453	183,453	183,453
	2000	238,239	238,239	238,239
Estimate	2005	170,635	170,635	170,635
Estimate	2006	187,948	187,948	187,948
Forecast	2007	190,150	194,070	189,910
	2008	193,540	199,690	193,050
	2009	196,980	204,680	196,250
	2010	200,520	209,360	199,540
	2011	202,470	212,220	201,250
	2012	204,420	214,910	202,970
	2013	206,410	217,510	204,710
	2014	208,430	220,060	206,490
	2015	210,470	222,540	208,290
	2020	221,100	234,690	217,710
	2025	232,410	246,860	227,790
Average Annual Growth Rates				
	1995-2005	-0.7%		
	2005-2015	2.1%	2.7%	2.0%
	2015-2025	1.0%	1.0%	0.9%
	2005-2025	1.6%	1.9%	1.5%

Source: Landrum & Brown, Inc.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Scenarios_Ops

VII.8 COMPARISON OF FORECAST RANGE TO 2005 FAA TAF

Exhibit VII-3 shows a comparison of the base, optimistic and pessimistic operations forecasts to the 2005 FAA TAF for ISP. The base case and the two scenarios project higher growth than the TAF.

Exhibit VII-3
BASE, OPTIMISTIC, & PESSIMISTIC OPERATIONS FORECASTS VS. 2005 TAF



Sources: FAA TAF; Landrum & Brown Analysis
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Scenarios_Ops

Filepath: H:\New York System Forecast\Documents\NYSDOT\2nd Draft\ISP\VII. ISP Aircraft Operations Forecast.doc

VIII. PEAK ACTIVITY FORECASTS

The traffic demand patterns imposed upon an airport are subject to seasonal, monthly, daily, and hourly variations. These variations result in peak periods, when the greatest constant amount of demand is placed upon facilities required to accommodate passenger and aircraft movements. Peaking characteristics are critical in the assessment of existing facilities and airfield components to determine their ability to accommodate forecast increases in passenger and operational activity throughout the study period. The objective of developing forecasts is to provide a design level that sizes facilities so they are neither underutilized nor overcrowded too often.

The annual enplanement and commercial passenger aircraft operations forecasts for ISP were converted into peak month, average week day, and peak hour equivalents using historical aviation statistics.

VIII.1 ENPLANED PASSENGERS

The peak month for enplanements was identified using monthly enplanement data from DOT, Schedule T100 data. August was identified as the peak month, with August 2005 accounting for 10.2 percent of annual enplanements. The air carrier and commuter peak month factors represented 9.9 percent and 11.5 percent of annual enplanements, respectively, in August 2005. It was assumed that the monthly seasonality patterns at ISP would not change materially over the forecast period.

The peak month enplanement forecasts were converted into average week day (PMAWD) and peak hour equivalents using OAG departing seat data as a proxy for enplanements.

Table VIII-1 presents the results of the peak enplanement activity forecasts for the 2010, 2015, 2020, and 2025 planning horizons.

PMAWD enplanements are projected to increase from 3,545 enplanements in 2005 to 5,220 passengers by 2025; representing average annual growth of 2.0 percent. Peak hour enplanements which were estimated to be 570 for the 2005 baseline design day are projected to increase to 920 enplanements by 2025.

Table VIII-1
ISP DERIVATIVE FORECASTS—PASSENGER ENPLANEMENTS

Annual				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	904,993	150,510	1,055,503
Forecast	2010	1,119,600	95,200	1,214,800
	2015	1,218,800	99,600	1,318,400
	2020	1,327,300	104,200	1,431,500
	2025	1,446,200	108,800	1,555,000

Peak Month				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	89,940	17,310	107,250
Forecast	2010	111,268	10,949	122,217
	2015	121,127	11,455	132,582
	2020	131,910	11,984	143,894
	2025	143,726	12,513	156,239

Peak Month Average Weekday				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	2,942	603	3,545
Forecast	2010	3,705	381	4,087
	2015	4,034	399	4,432
	2020	4,393	417	4,810
	2025	4,786	436	5,222

Peak Hour				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	525	85	569
Forecast	2010	674	108	721
	2015	733	113	782
	2020	799	119	849
	2025	870	124	922

Source: Landrum & Brown, Inc.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Peak Enpax

VIII.2 PASSENGER AIRCRAFT OPERATIONS

Peak month operations factors were developed primarily using the FAA Air Traffic Activity Data System (ATADS); DOT, T-100 data, and airline schedules published in the OAG. August was selected as the month from which to develop peak month operations factors for the 2010, 2015, 2020, and 2025 planning periods. As for enplanements, the passenger operations data was developed for air carrier and commuter. It is worth noting that the peak hour for air carrier and commuter passenger activity does not necessarily occur in the same hour.

Derivative passenger operations forecasts by category are presented in **Tables VIII-2**.

Table VIII-2
ISP DERIVATIVE FORECASTS—PASSENGER AIRCRAFT OPERATIONS

Annual				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	19,932	13,187	33,119
Forecast	2010	24,030	6,700	30,730
	2015	25,670	6,150	31,820
	2020	27,430	5,650	33,080
	2025	29,320	5,180	34,500

Peak Month				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	1,701	1,317	3,018
Forecast	2010	2,051	669	2,720
	2015	2,191	614	2,805
	2020	2,341	564	2,905
	2025	2,502	517	3,020

Peak Month Average Weekday				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	56	48	104
Forecast	2010	68	24	92
	2015	72	22	95
	2020	77	21	98
	2025	82	19	101

Peak Hour				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	7	7	11
Forecast	2010	7	6	12
	2015	8	6	13
	2020	8	5	13
	2025	9	5	13

Source: Landrum & Brown, Inc.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\ISP\[ISP Template.xls]Peak Ops

Filepath: H:\New York System Forecast\Documents\NYSDOT\2nd Draft\ISP\VIII. ISP Peak Activity forecasts.doc

IX. 2015 Airline Flight Schedules

The traffic demand patterns imposed upon an airport are subject to seasonal, monthly, daily, and hourly variations. These variations result in peak periods, when the greatest constant amount of demand is placed upon facilities required to accommodate passenger and aircraft movements. Peaking characteristics are critical in the assessment of existing facilities and airfield components to determine their ability to accommodate forecast increases in passenger and operational activity throughout the study period. The objective of developing forecasts is to provide a design level that sizes facilities so they are neither underutilized nor overcrowded too often.

The annual enplanement and aircraft operations forecasts for ISP were converted into peak month average weekday (PMAWD) forecasts using historical aviation statistics. These PMAWD statistics formed the basis for developing the 2015 flight schedules.

IX.1 Enplaned Passengers

The peak month for enplanements was identified using monthly enplanement data from DOT, Schedule T100 data. August was identified as the peak month, with August 2005 accounting for 10.2 percent of annual enplanements. The air carrier and commuter peak month factors represented 9.9 percent and 11.5 percent of annual enplanements, respectively, in August 2005. It was assumed that the monthly seasonality patterns at ISP would not change materially over the forecast period.

The peak month enplanement forecasts were converted into average week day (PMAWD) and peak hour equivalents using OAG departing seat data as a proxy for enplanements.

At ISP, PMAWD enplanements are projected to increase from 3,545 enplanements in 2005 to 4,432 enplanements by 2015; representing average annual growth of 2.3 percent. **Table IX-1** presents the PMAWD enplanement activity forecasts for 2015 for ISP.

Table IX-1
ISP FORECASTS—2015 PASSENGER ENPLANEMENTS

	Calendar Year	Annual Enplanements	PMAWD
Actual	1990	550,229	1,848
	1995	567,929	1,907
	2000	1,119,833	3,761
Estimated	2005	1,055,503	3,545
	2006	1,137,993	3,866
Forecast	2007	1,156,700	3,930
	2008	1,175,800	3,995
	2009	1,195,100	4,060
	2010	1,214,800	4,087
	2011	1,234,800	4,153
	2012	1,255,200	4,221
	2013	1,276,000	4,291
	2014	1,297,000	4,361
	2015	1,318,400	4,432
Average Annual Growth Rates			
	1990-2005	4.4%	4.4%
	2005-2015	2.2%	2.3%

Sources: NYSDOT; US DOT Schedule T100, *Official Airline Guide*; Landrum & Brown, analysis.

IX. Aircraft Operations

Peak month operations factors for ISP were developed primarily using the FAA Air Traffic Activity Data System (ATADS), DOT, T-100 data, and airline schedules published for commercial passenger activity in the OAG. August was selected as the month from which to develop peak month operations factors for the 2015 design day schedule. Passenger operations data were developed for air carrier and commuter based on assumptions related to aircraft gauge and passenger load factor.

Derivative forecasts by operations category for ISP are presented in **Table IX-2**.

Table IX-2
ISP PMAWD FORECASTS—AIRCRAFT OPERATIONS

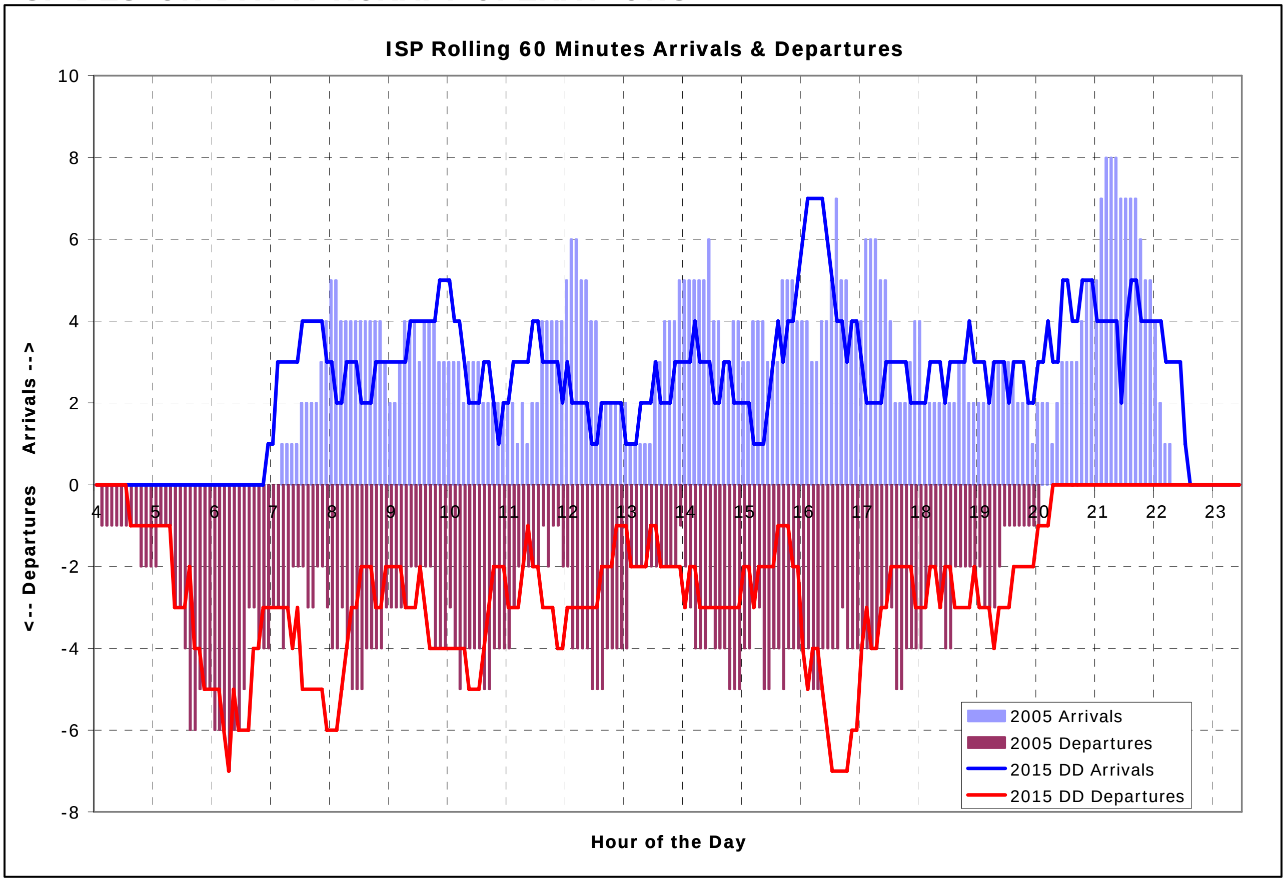
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Actual	1990	32	94	126
	1995	26	93	119
	2000	56	80	136
Estimated	2005	56	48	104
	2006	63	32	94
Forecast	2007	65	26	90
	2008	66	25	91
	2009	67	25	91
	2010	68	24	92
	2011	68	24	92
	2012	69	24	93
	2013	70	23	93
	2014	71	23	94
	2015	72	22	95
Average Annual Growth Rates				
	1990-2005	3.8%	-4.4%	-1.3%
	2005-2015	2.6%	-7.3%	-1.0%

Sources: NYSDOT; US DOT Schedule T100, *Official Airline Guide*; Landrum & Brown, analysis.

At ISP, PMAWD operations are projected to decline in 2006 and 2007 due to reduced commuter activity. Thereafter, PMAWD operations are expected to increase gradually due to increased air carrier operations and reach 95 PMAWD operations by 2015.

For purposes of developing the design day schedule the aggregate forecasts were then broken down by airline and by aircraft type. A base airline schedule from August 2005, supplemented by schedules from 2006 and 2007, was used from which to develop the future 2015 design day schedule. The 2005 baseline and 2015 design day operations are presented in **Exhibits IX-1** a "heart beat" chart showing aircraft operations by 5 minute bucket on a rolling 60 minute basis.

Exhibit IX-1
ISP DESIGN DAY AIRCRAFT OPERATIONS



Sources: *Official Airline Guide* and Landrum & Brown analysis.