FAA Regional Air Service Demand Study

Grant #:
3-36-0000-002-03
(Phase I)
3-36-0000-04-05
(Phase II)

Task B — Forecast of Passengers, Operations and Other Activities for Westchester County Airport

May 2007

New York State Department of Transportation

SWF –
Stewart International Airport

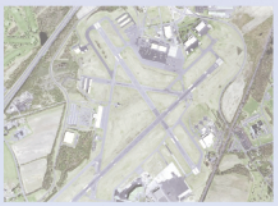
HPN –
Westchester County Airport

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

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EXECUTIVE SUMMARY
INTRODUCTION/PURPOSE

This report presents comprehensive forecasts of aviation demand at Westchester County 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 some of the airports already have 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 at each airport (an optimistic scenario was not developed for HPN due to access restrictions). 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 HPN.

SUMMARY OF FINDINGS
ANNUAL FORECASTS OF AVIATION ACTIVITY

This section contains a summary of the forecast results for the baseline forecasts and the pessimistic scenario for HPN. **Table 1** and **Exhibit 1** show a summary of the forecast of enplaned passengers through 2025 for the baseline case and the pessimistic scenario. Total enplaned passengers in the base case are forecast to grow from 466,428 in 2005 to 657,300 by 2025, representing average annual growth of 1.7 percent. The base case represents organic growth in addition to AirTran service beginning in 2006.

Table 1
HPN ENPLANED PASSENGER FORECAST SUMMARY

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	469,900		
	2000	517,359		
Estimate	2005	466,428		
Estimate	2006	546,956	n/a	503,813
Forecast	2007	599,600	n/a	527,300
	2008	607,700	n/a	535,300
	2009	614,100	n/a	541,500
	2010	619,300	n/a	546,600
	2011	623,800	n/a	550,900
	2012	627,700	n/a	554,600
	2013	631,200	n/a	557,900
	2014	634,300	n/a	560,900
	2015	637,100	n/a	563,600
	2016	639,800	n/a	566,000
	2017	642,200	n/a	568,300
	2018	644,500	n/a	570,400
	2019	646,600	n/a	572,400
	2020	648,600	n/a	574,200
	2021	650,500	n/a	575,900
	2022	652,300	n/a	577,600
	2023	654,100	n/a	579,100
	2024	655,700	n/a	580,600
	2025	657,300	n/a	582,000
Average Annual Growth Rates				
	1995-2005	-0.1%		
	2005-2015	3.2%		1.9%
	2015-2025	0.3%		0.3%
	2005-2025	1.7%		1.1%

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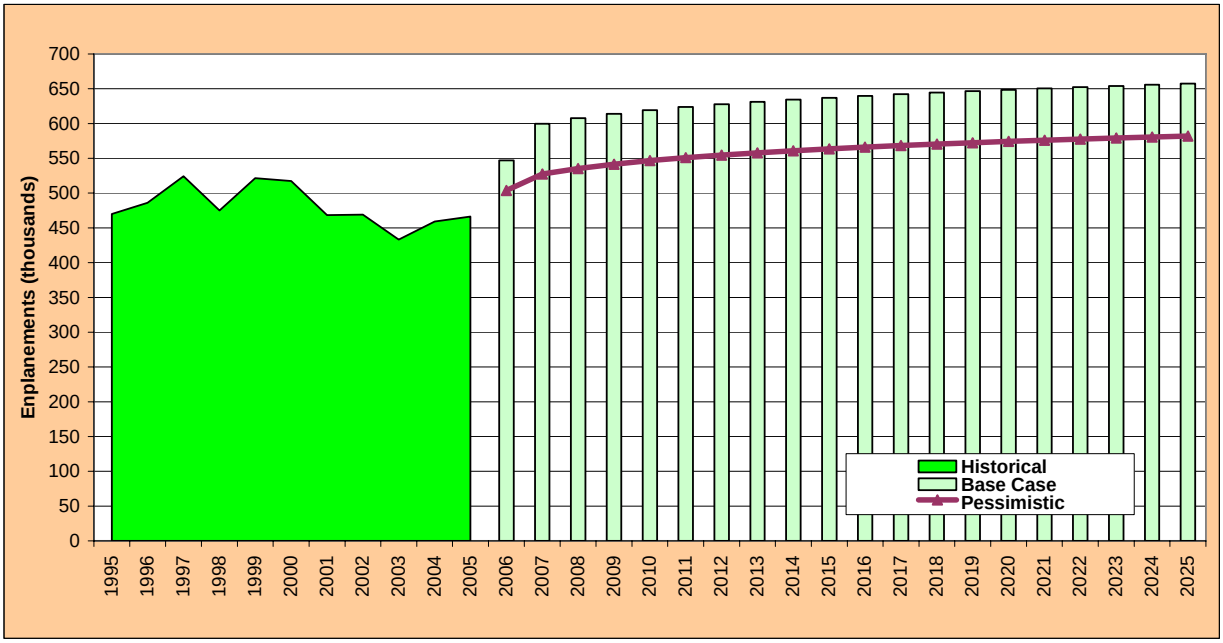
Source: Landrum & Brown Analysis

Exhibit 1
HPN FORECASTS OF TOTAL ANNUAL PASSENGERS



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Source: Landrum & Brown Analysis

An optimistic scenario is not feasible for HPN given its current air service restrictions. The pessimistic scenario assumes a reduction in the number of new passengers for AirTran as compared to the base case. The pessimistic scenario results in 582,000 enplaned passengers in 2025 (1.1 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 pessimistic scenario. Annual aircraft operations are forecast to increase from 193,906 in 2005 to 251,530 in 2025 in the base case, representing 1.3 percent average annual growth. The pessimistic scenario results in 246,480 operations in 2025 (average annual growth of 1.2 percent annually).

Table 2
HPN FORECASTS OF TOTAL AIRCRAFT OPERATIONS

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	200,192		
	2000	217,082		
Estimate	2005	193,906	n/a	193,906
Estimate	2006	196,500	n/a	193,400
Forecast	2007	200,330	n/a	195,170
	2008	203,380	n/a	198,220
	2009	206,360	n/a	201,210
	2010	209,310	n/a	204,180
	2011	211,950	n/a	206,820
	2012	214,620	n/a	209,490
	2013	217,290	n/a	212,160
	2014	219,970	n/a	214,850
	2015	222,290	n/a	217,240
	2020	236,430	n/a	231,390
	2025	251,530	n/a	246,480
Average Annual Growth Rates				
	1995-2005	-0.3%		
	2005-2015	1.4%		1.1%
	2015-2025	1.2%		1.3%
	2005-2025	1.3%		1.2%

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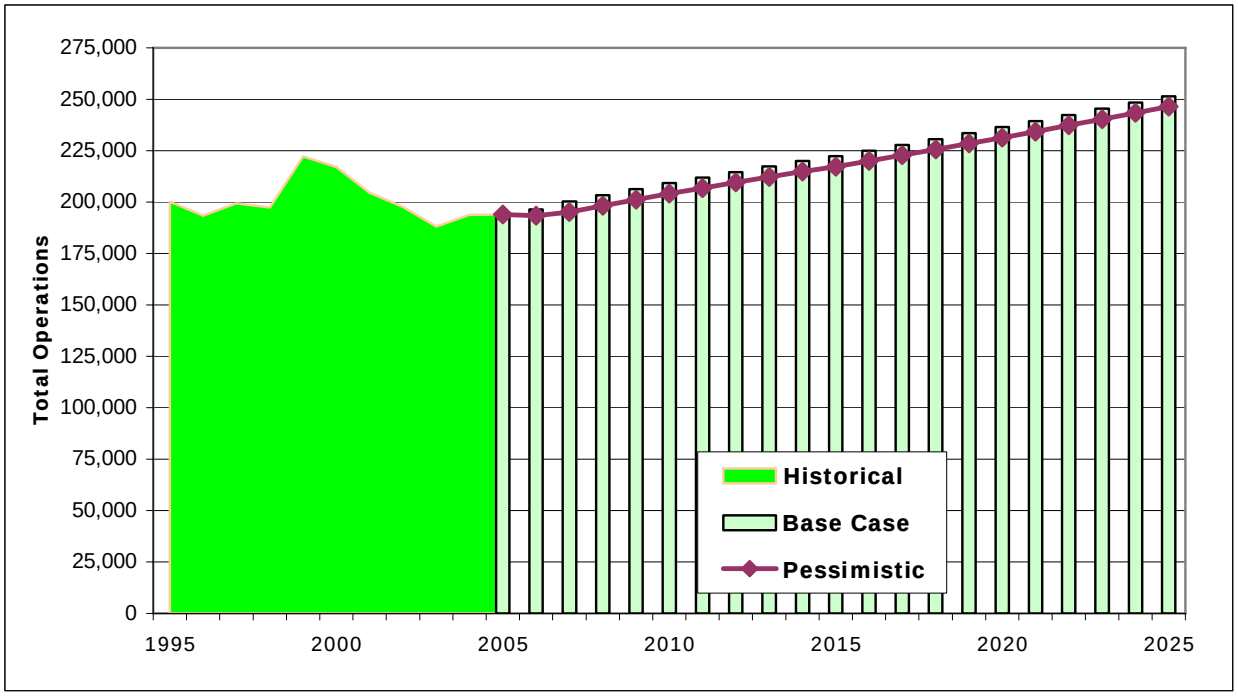
Source: Landrum & Brown, Inc.

Exhibit 2
HPN FORECASTS OF TOTAL AIRCRAFT OPERATIONS



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Source: Landrum & Brown, Inc.

2005 TERMINAL AREA FORECAST COMPARISON

Table 3 presents a comparison of the 2005 FAA Terminal Area Forecast (TAF) for HPN to the two HPN forecasts developed for the FAA Regional Air Service Demand Study. TAF enplanements grow at a robust 3.7 percent compared to 1.7 percent for the base forecast. By 2025, TAF enplanements are over 29 percent higher than the base case forecast enplanements. The TAF aircraft operations forecast is approximately two percent lower than the base case forecast throughout the forecast period.

Table 3
COMPARISON TO FAA 2005 TAF

		Enplaned Passengers			Aircraft Operations		
	Year	Base Case	TAF	Variance	Base Case	TAF	Variance
Estimate	2005	466,428	408,906	-12.3%	193,906	193,906	0.0%
Estimate	2006	546,956	423,164	-22.6%	196,500	193,400	-1.6%
Forecast	2007	599,600	438,036	-26.9%	200,330	195,170	-2.6%
	2008	607,700	453,550	-25.4%	203,380	198,220	-2.5%
	2009	614,100	469,732	-23.5%	206,360	201,210	-2.5%
	2010	619,300	486,613	-21.4%	209,310	204,180	-2.5%
	2011	623,800	504,220	-19.2%	211,950	206,820	-2.4%
	2012	627,700	522,587	-16.7%	214,620	209,490	-2.4%
	2013	631,200	541,746	-14.2%	217,290	212,160	-2.4%
	2014	634,300	561,730	-11.4%	219,970	214,850	-2.3%
	2015	637,100	582,577	-8.6%	222,290	217,240	-2.3%
	2016	639,800	604,321	-5.5%	225,000	219,960	-2.2%
	2017	642,200	627,004	-2.4%	227,810	222,770	-2.2%
	2018	644,500	650,664	1.0%	230,650	225,610	-2.2%
	2019	646,600	675,344	4.4%	233,520	228,480	-2.2%
	2020	648,600	701,088	8.1%	236,430	231,390	-2.1%
	2021	650,500	727,941	11.9%	239,370	234,330	-2.1%
	2022	652,300	755,953	15.9%	242,350	237,310	-2.1%
	2023	654,100	785,172	20.0%	245,380	240,330	-2.1%
	2024	655,700	815,651	24.4%	248,430	243,390	-2.0%
	2025	657,300	847,443	28.9%	251,530	246,480	-2.0%
Average Annual Growth Rates							
	2005-2015	3.2%	3.6%		1.4%	1.1%	
	2015-2025	0.3%	3.8%		1.2%	1.3%	
	2005-2025	1.7%	3.7%		1.3%	1.2%	

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Sources: FAA 2005 TAF; Landrum & Brown analysis

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I. AIRPORT SERVICE AREAS

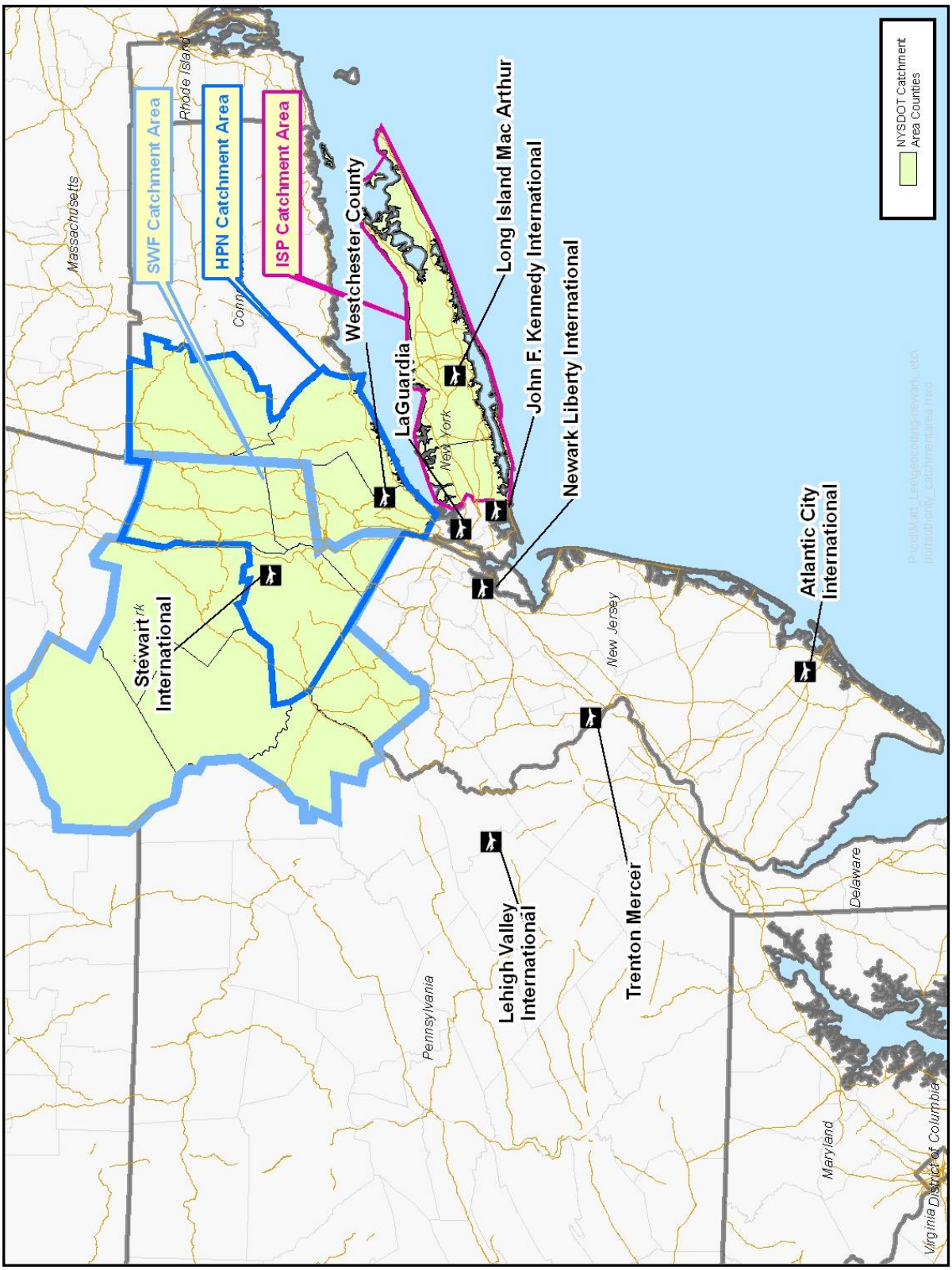
The service area (or catchment area) for the New York State Department of Transportation (NYSDOT) airports is a subset of the service area for the entire FAA Regional Air Service Demand Study. The service areas for each of the NYSDOT airports are shown in **Exhibit I-1**. The service areas were defined 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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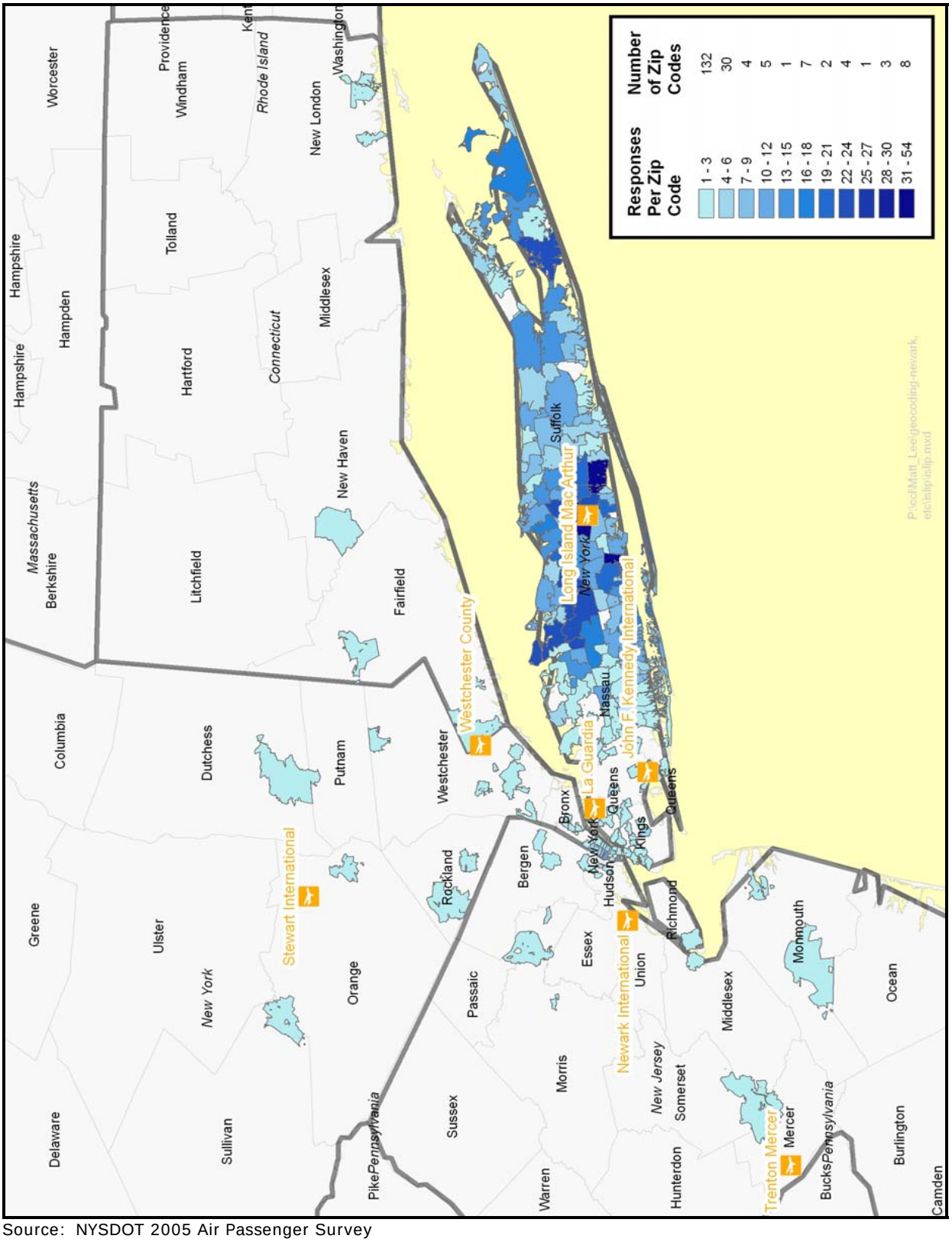
Source: NYSDOT, 2005 Air Passenger Survey

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.

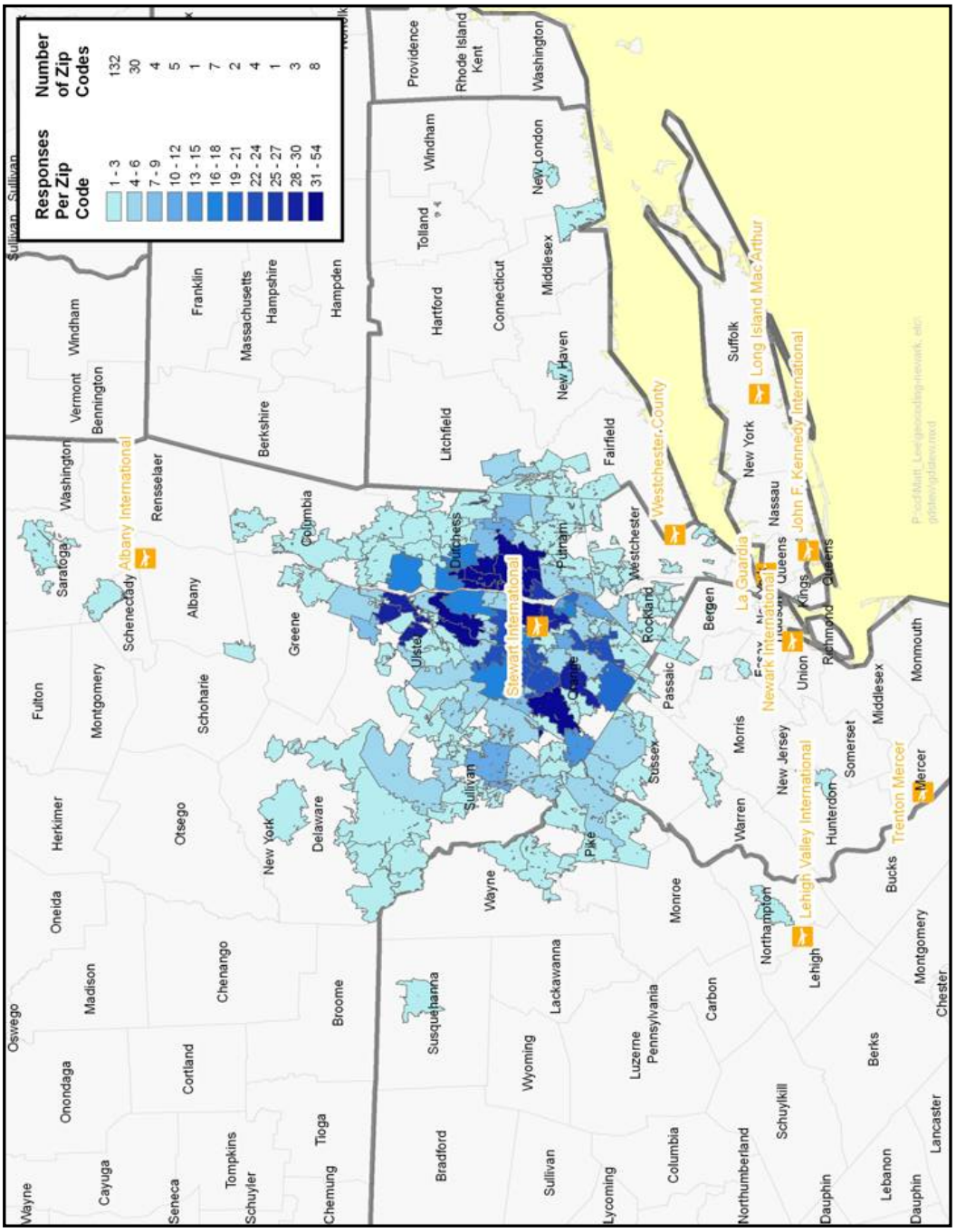
Exhibit I-2
DISTRIBUTION OF PASSENGER TRIP ORIGINS FOR ISP



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.

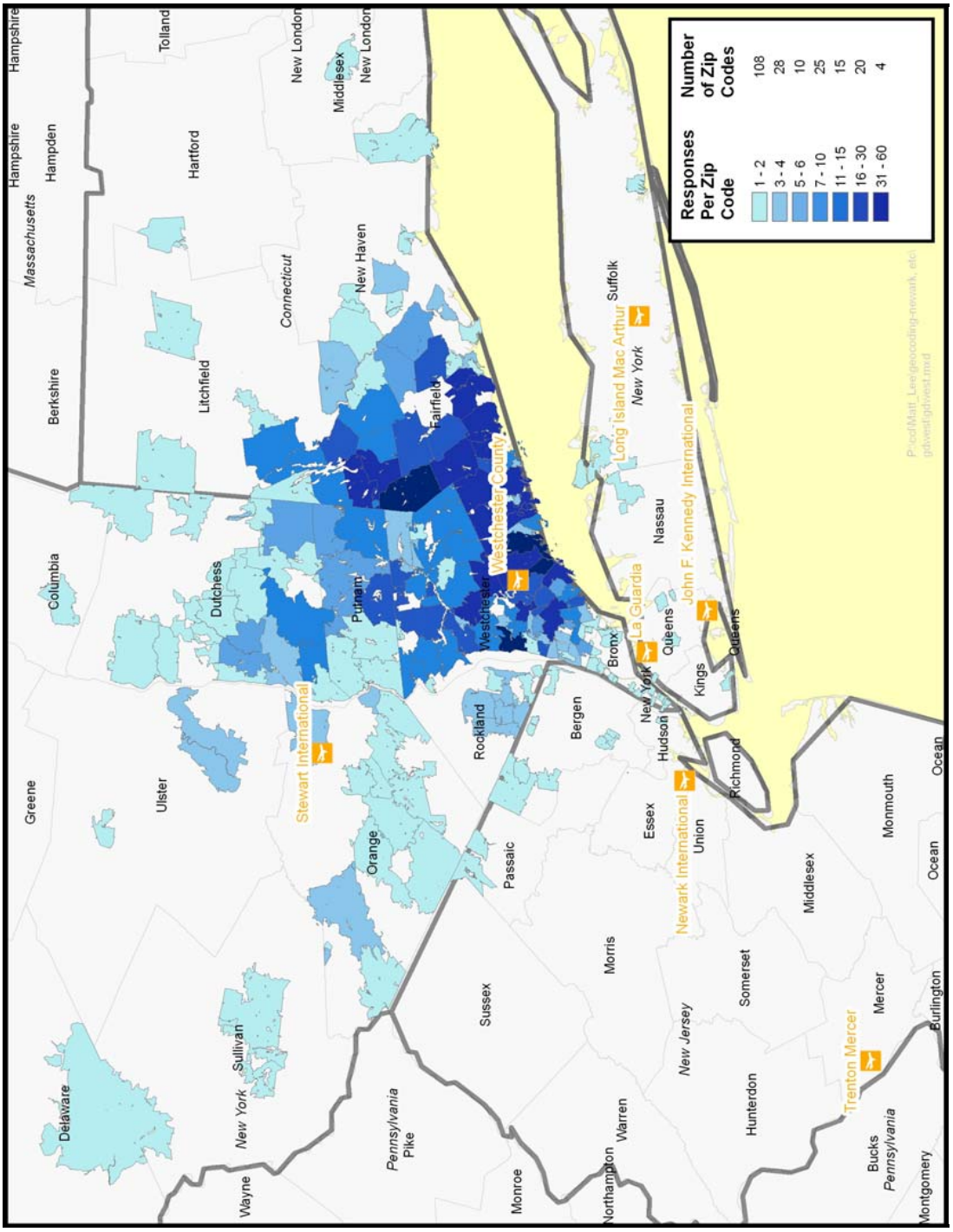
Exhibit I-3
DISTRIBUTION OF PASSENGER TRIP ORIGINS FOR SWF



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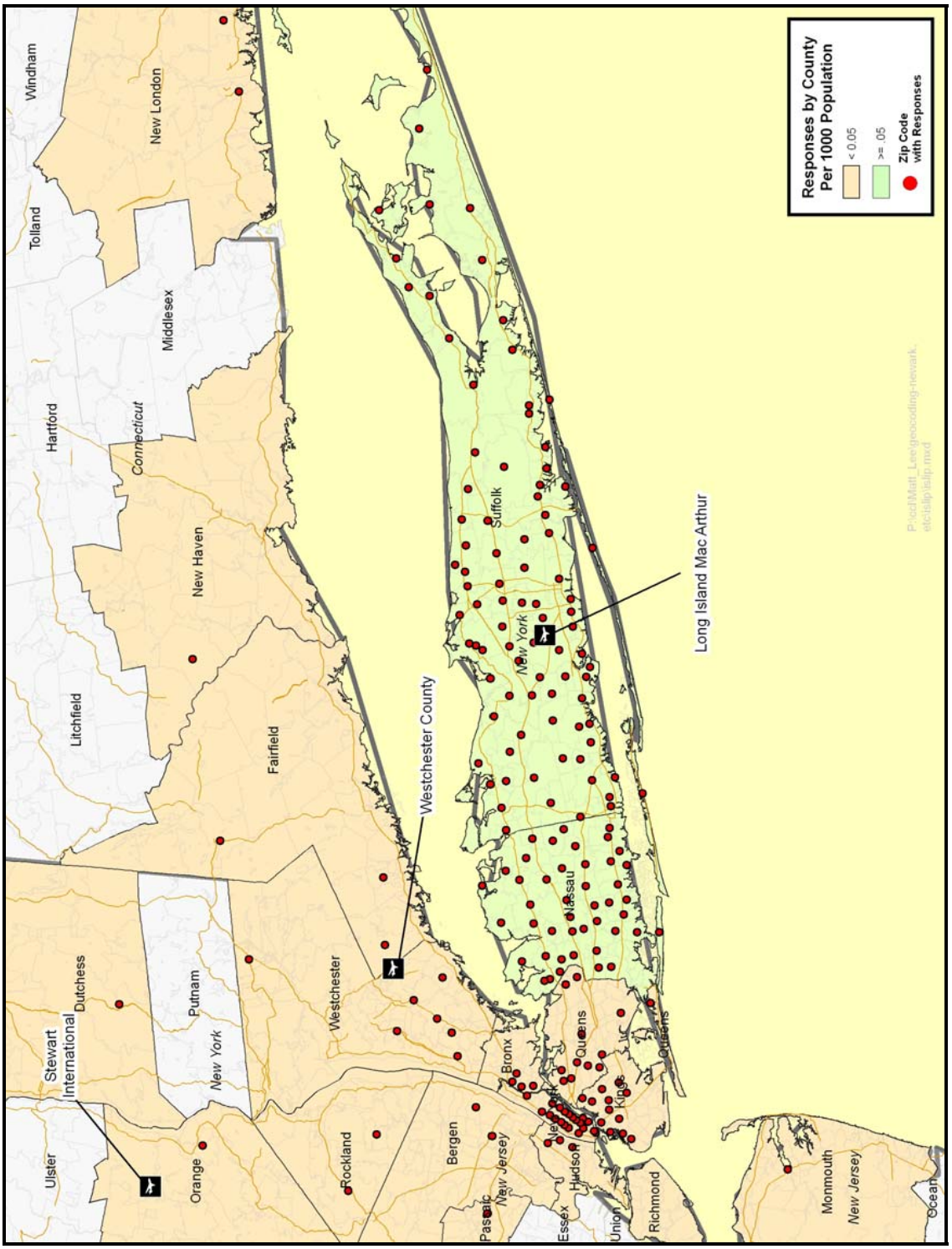
Sources: NYSDOT, 2005 Air Passenger Survey and Landrum & Brown analysis.

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

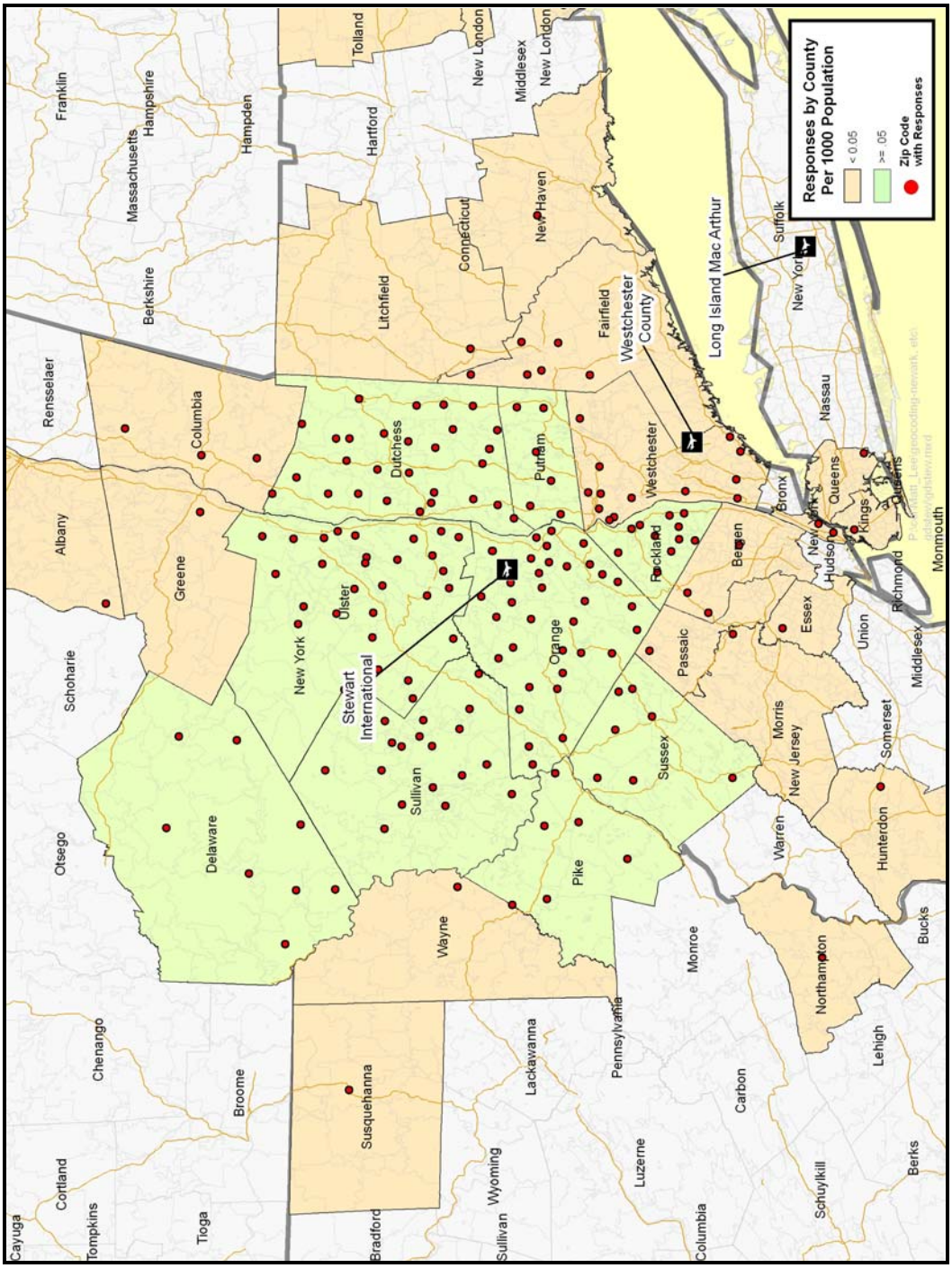
Exhibit I-5
ISP AIRPORT SERVICE AREA



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.

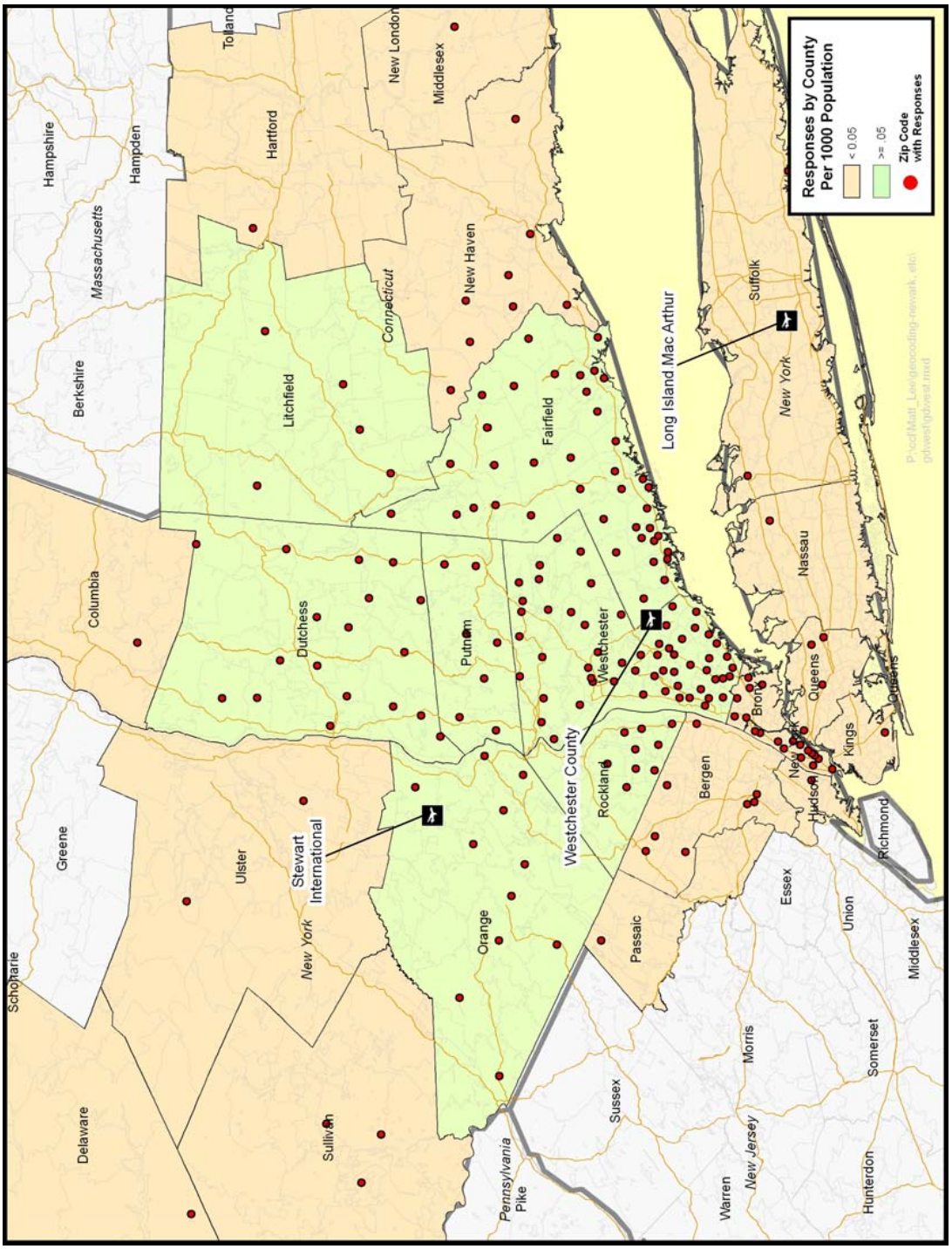
Exhibit I-6
SWF SERVICE AREA



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

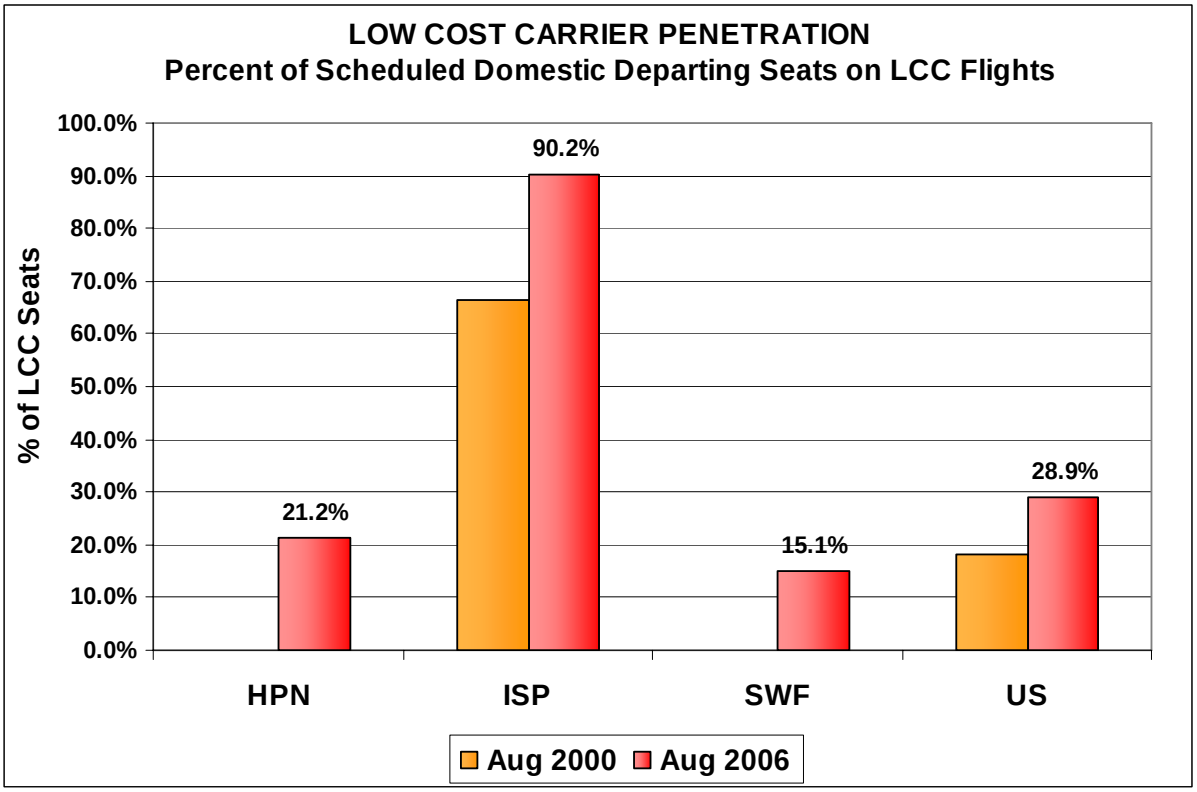
airside congestion will have no effect on air travel demand (unconstrained forecast).

- **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

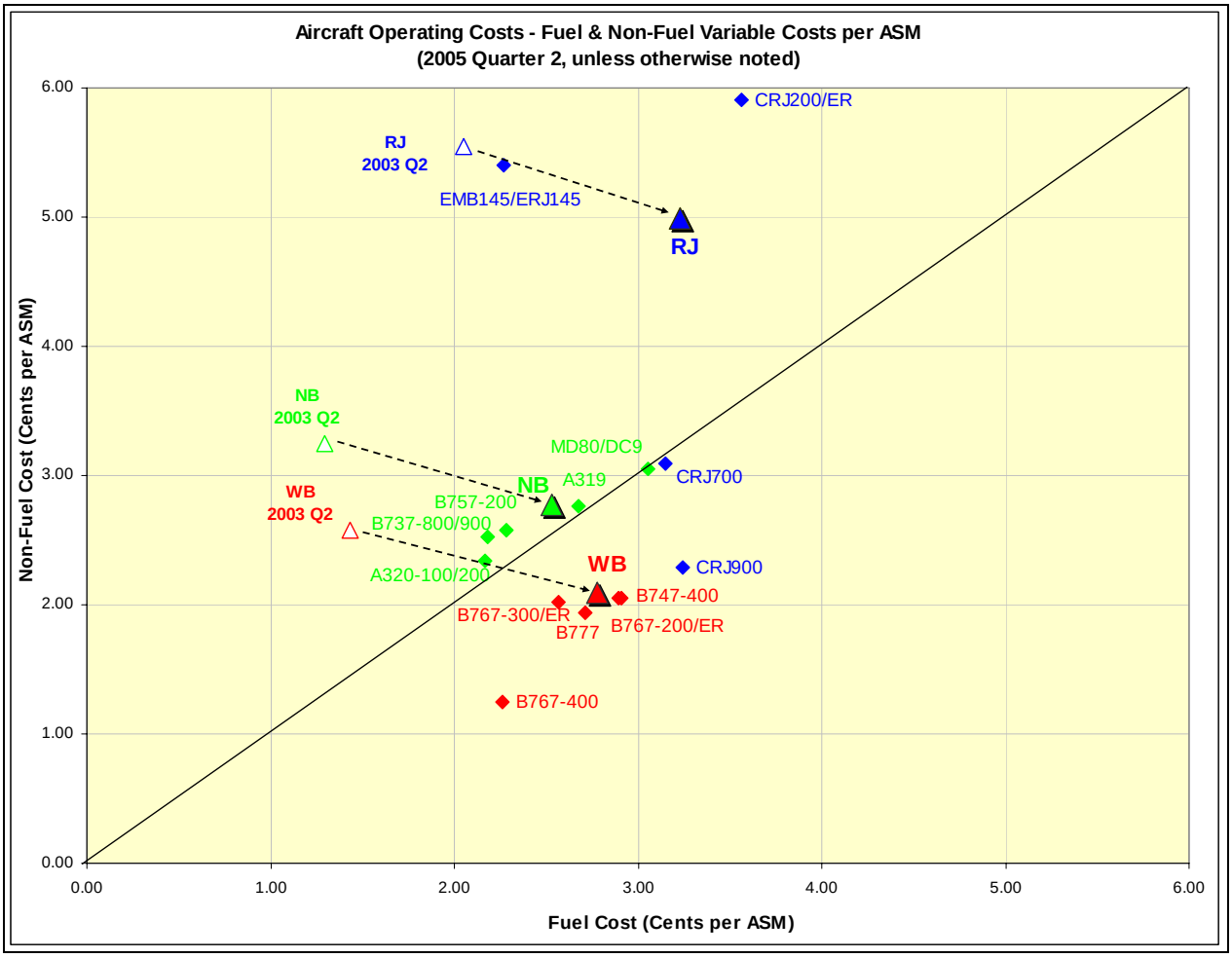
The dramatic rise of fuel prices in 2005 has changed the economics of the aviation industry. Two carriers (Delta Air Lines and Northwest Airlines) declared bankruptcy as a direct result of initial weak financial positions and subsequent increases in fuel prices. Other established airlines increased their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

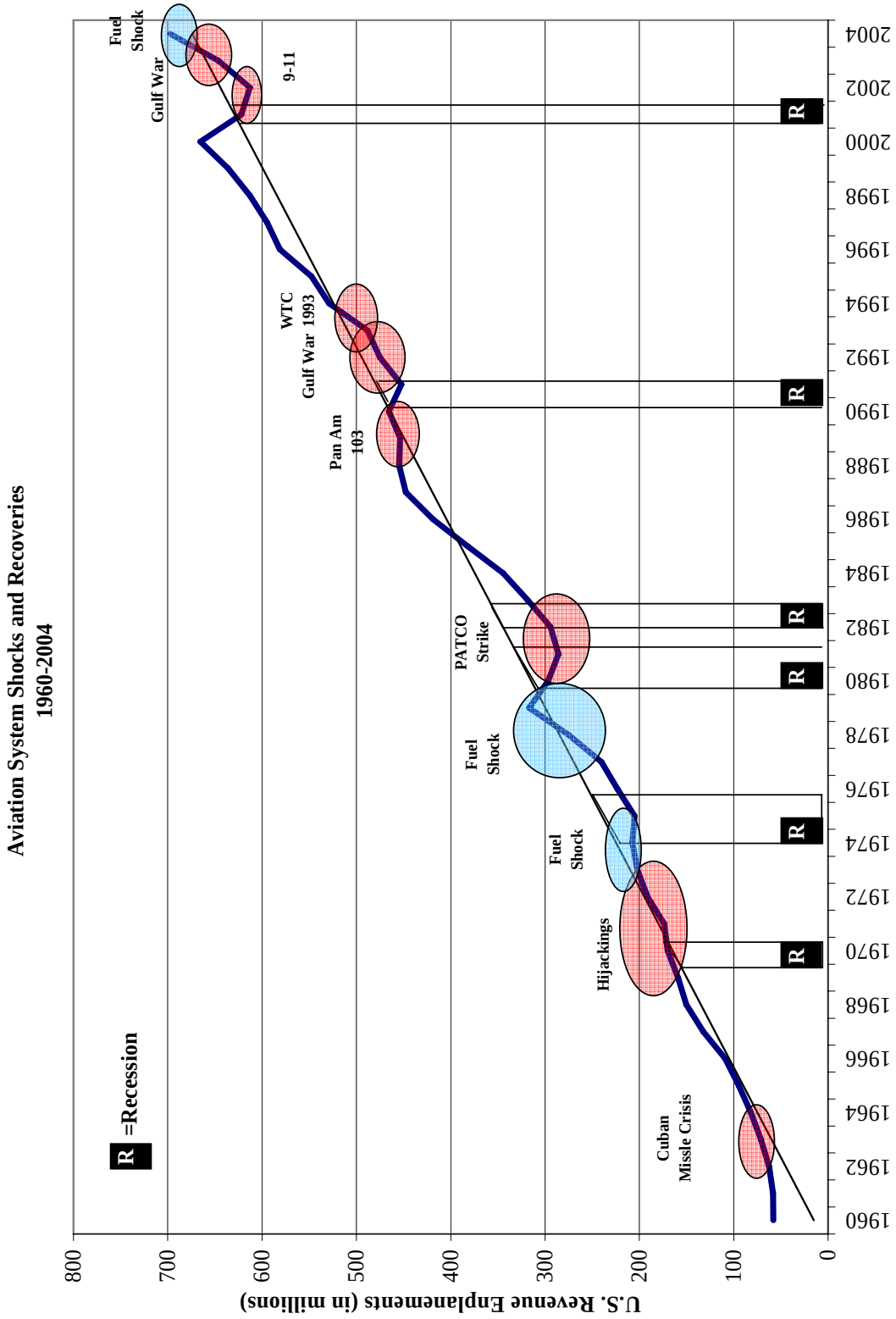
Far more start-up low cost carriers fail than succeed. Many fail because of a faulty business concept, or have bad timing with a sound business concept. Independence Air is the most recent example of bad timing, starting with an regional jet based business plan, just prior to the price of fuel increasing 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

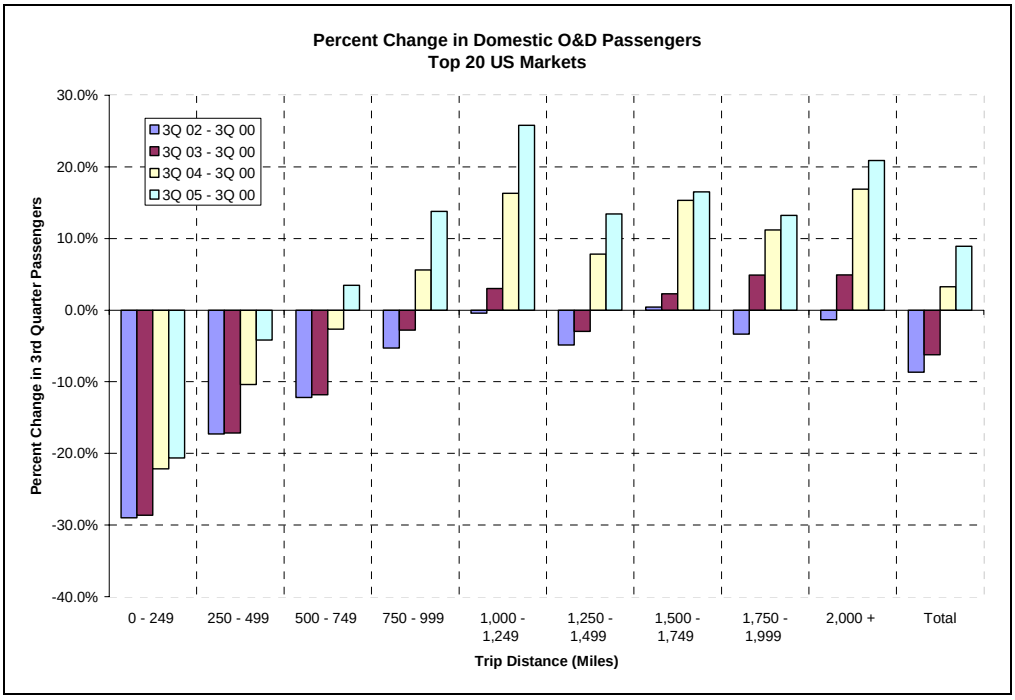
II.7 EFFECTS OF THE ATTACKS OF SEPTEMBER 11, 2001 -- REAL DECLINE IN SHORT-HAUL TRAVEL

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.

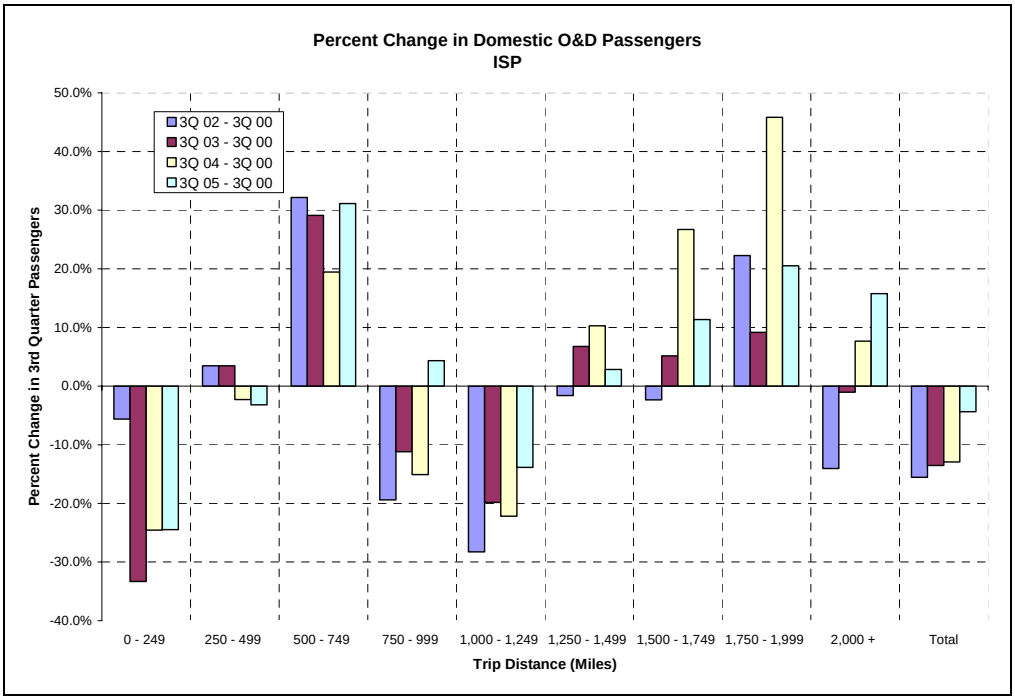
Exhibits II-5 through **II-7** show the comparative change in travel demand by mileage band for ISP, SWF, and HPN, respectively.

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



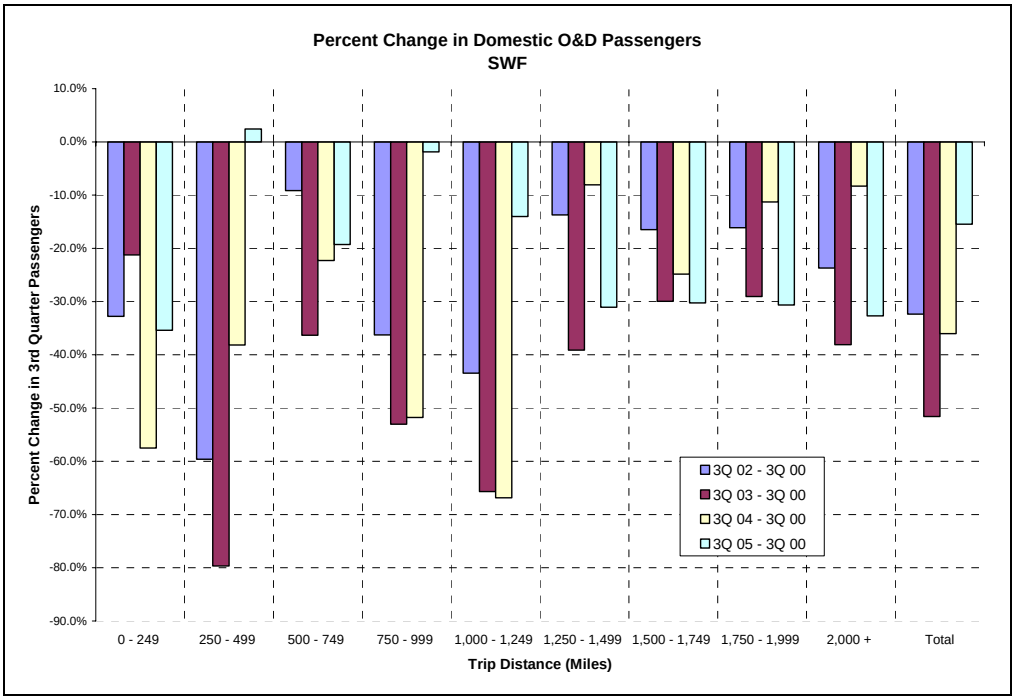
Sources: US DOT T-100 Data and Landrum & Brown analysis

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



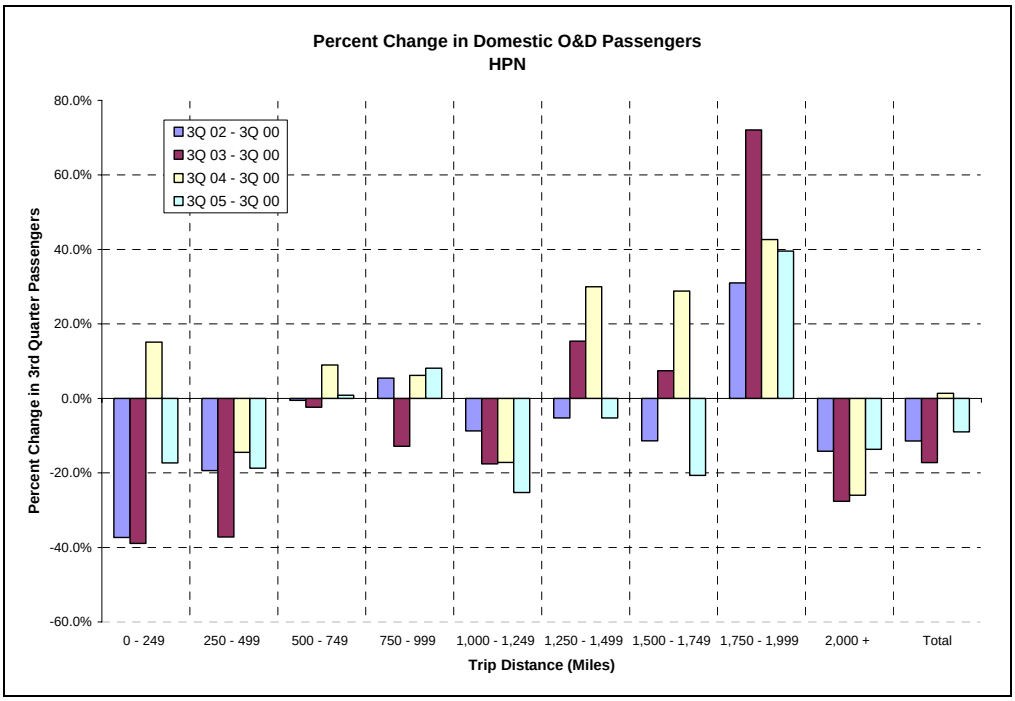
Sources: US DOT T-100 Data and Landrum & Brown analysis

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

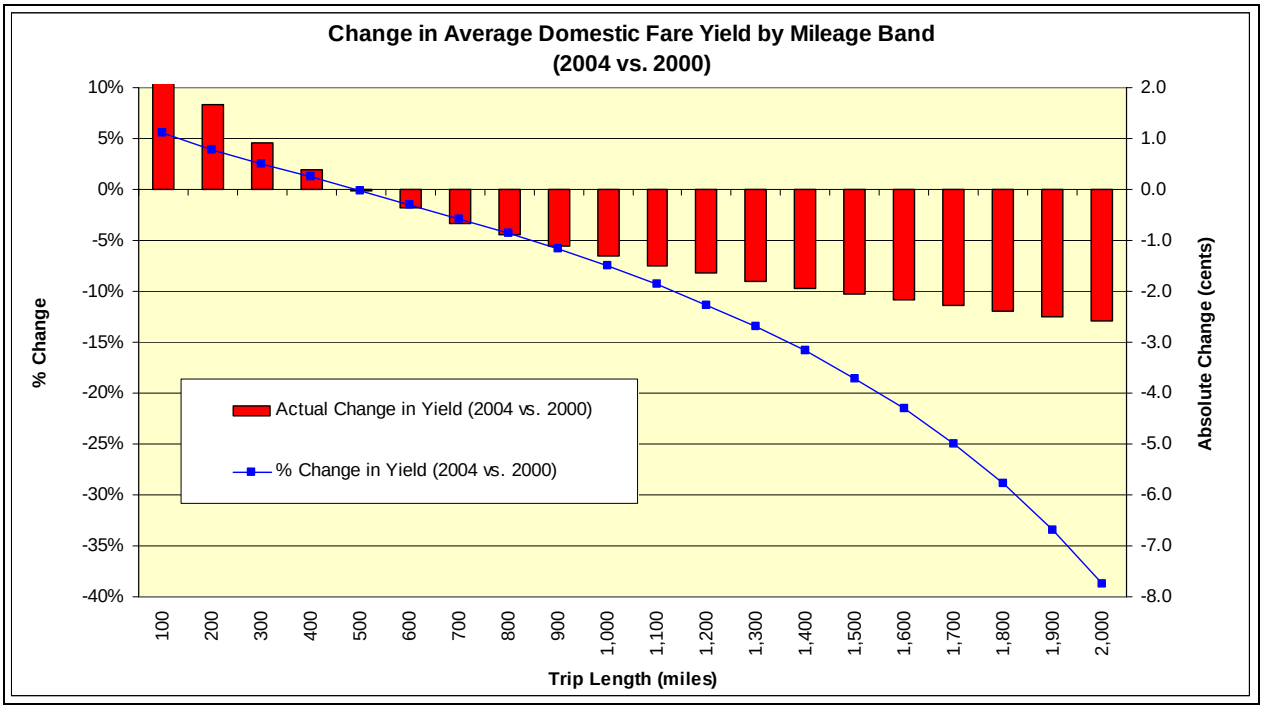


Sources: US DOT T-100 Data and Landrum & Brown analysis

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



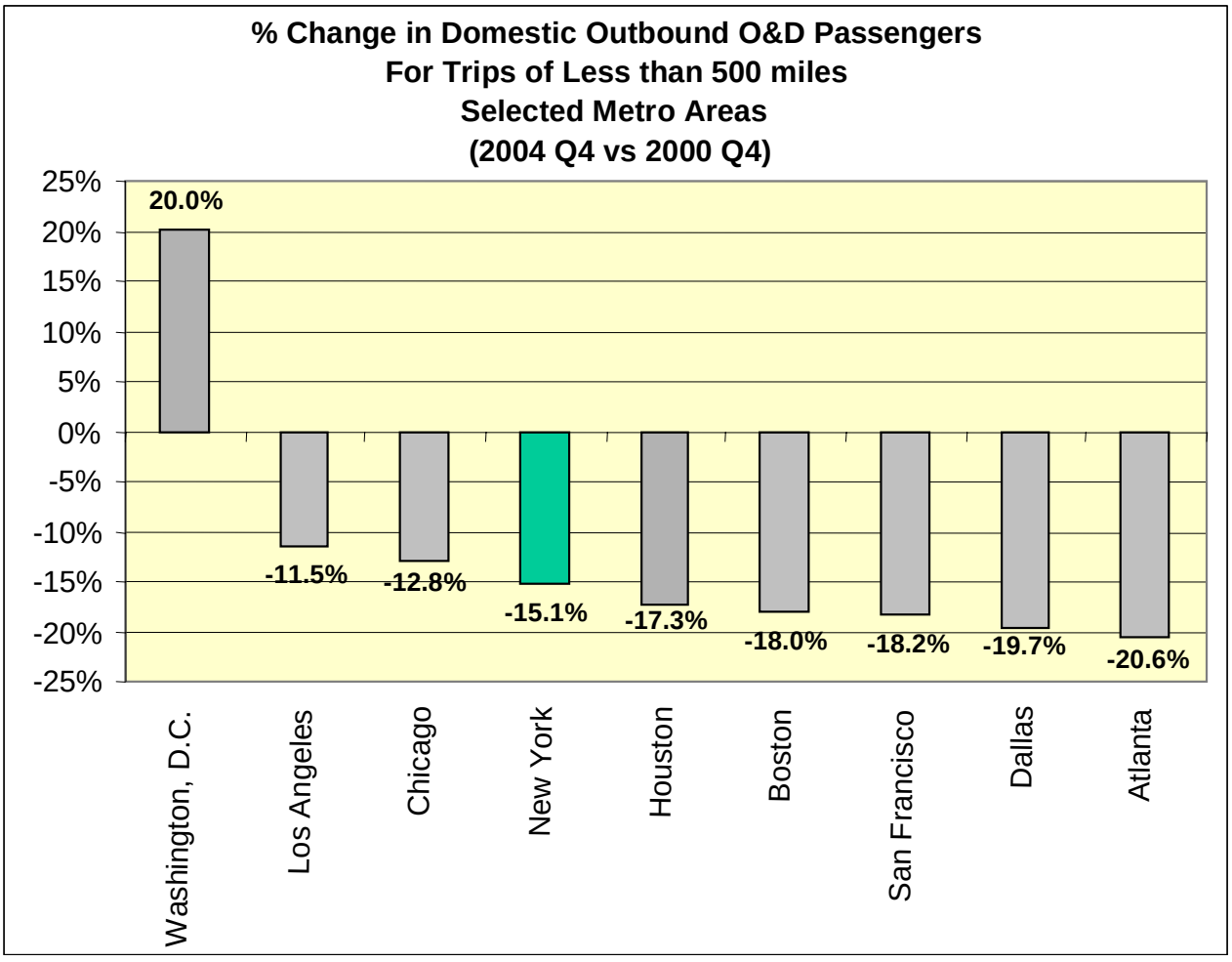
Sources: US DOT T-100 and Landrum & Brown analysis

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 HPN 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 an approximately 60-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

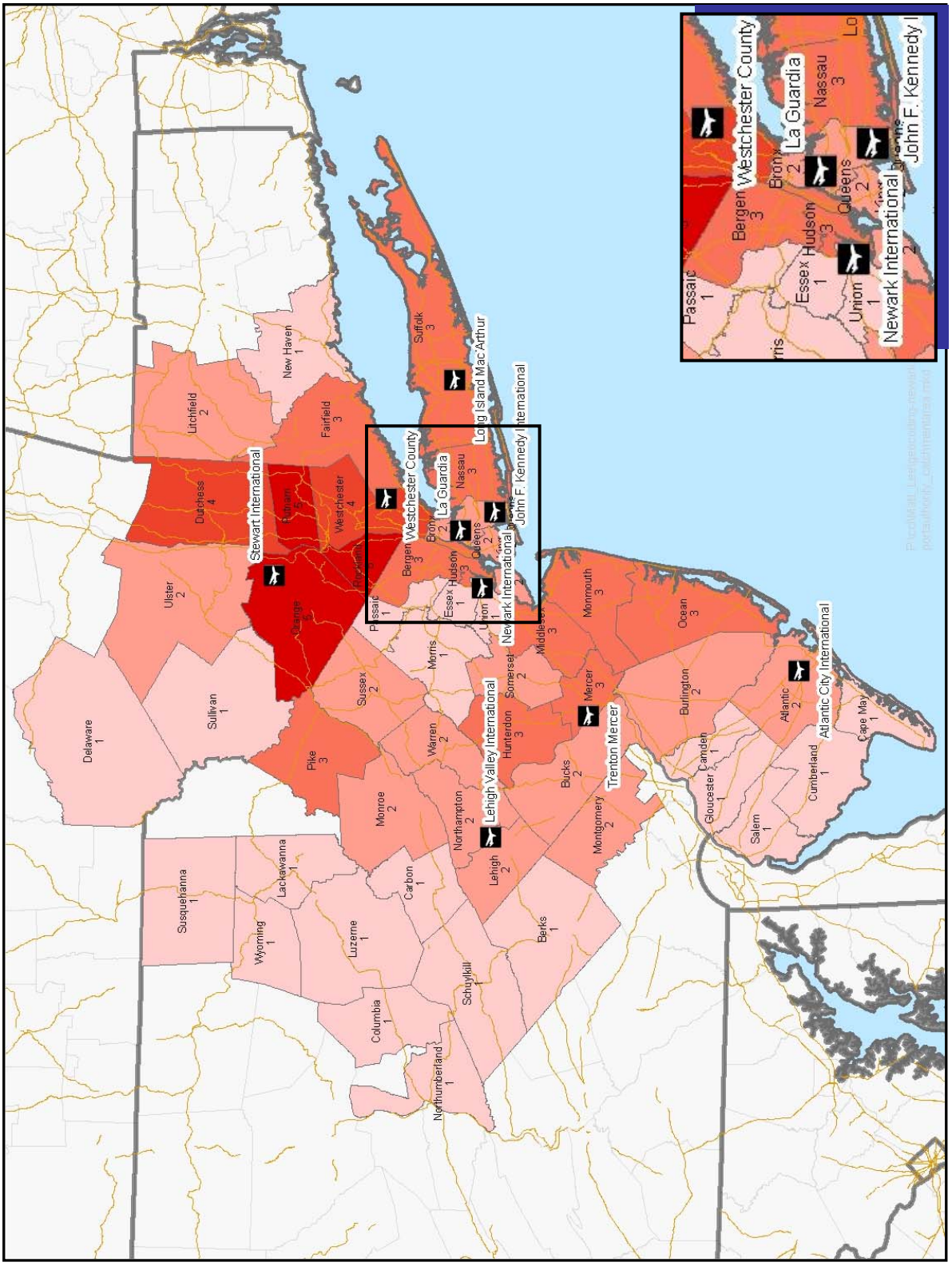
	AIRPORT REPORTING		
Airport Preferred	**HPN**	**ISP**	**SWF**
HPN	71%	1%	1%
ISP	N/A	71%	N/A
SWF	4%	1%	80%
LGA	16%	12%	5%
JFK	4%	9%	3%
EWR	3%	4%	8%

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.

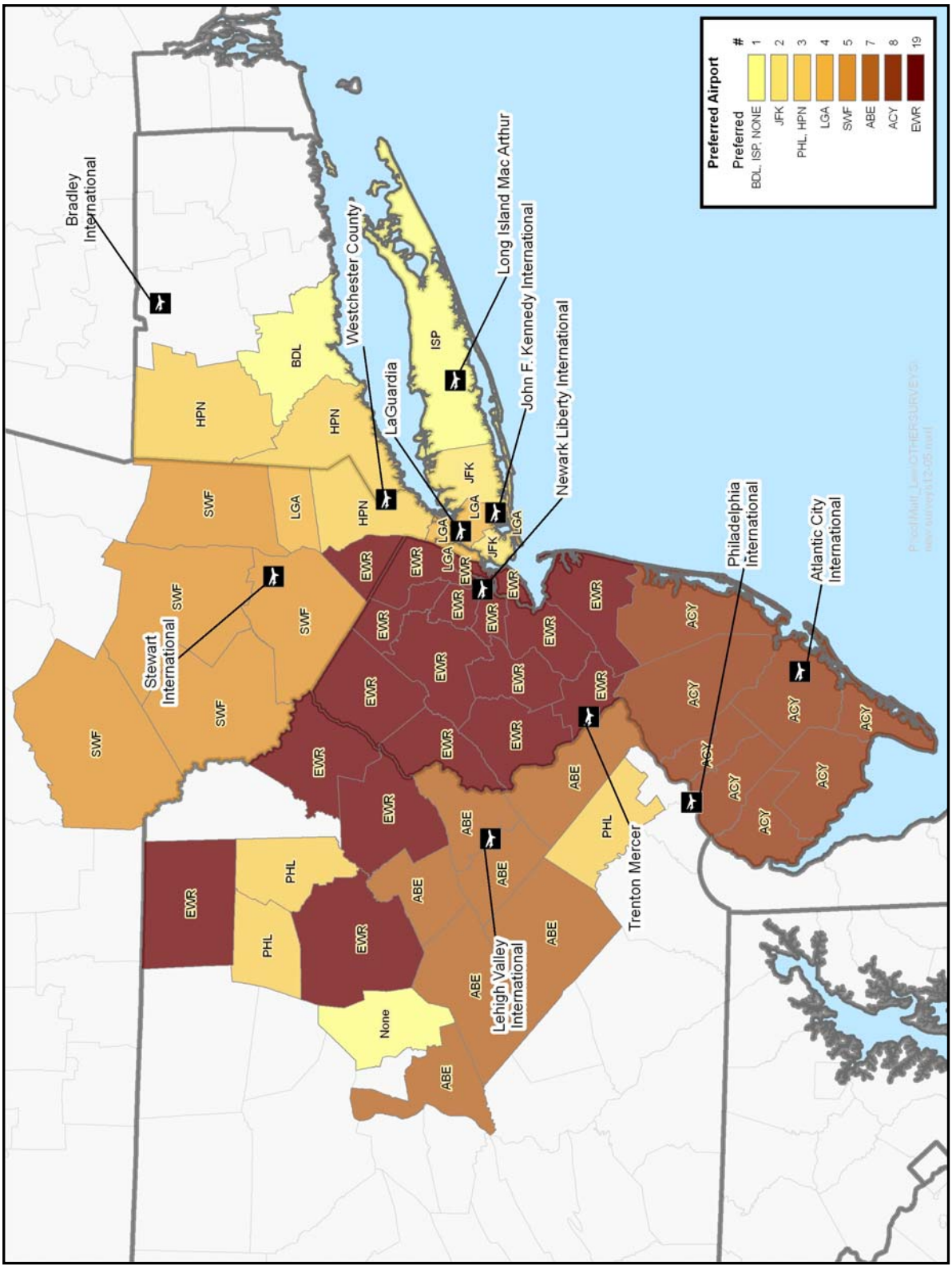
Exhibit II-11 shows the most preferred airport for each county in the expanded study area (all 9 airports). Local barriers to transportation such as the Hudson River clearly shape the service areas for each airport.

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.

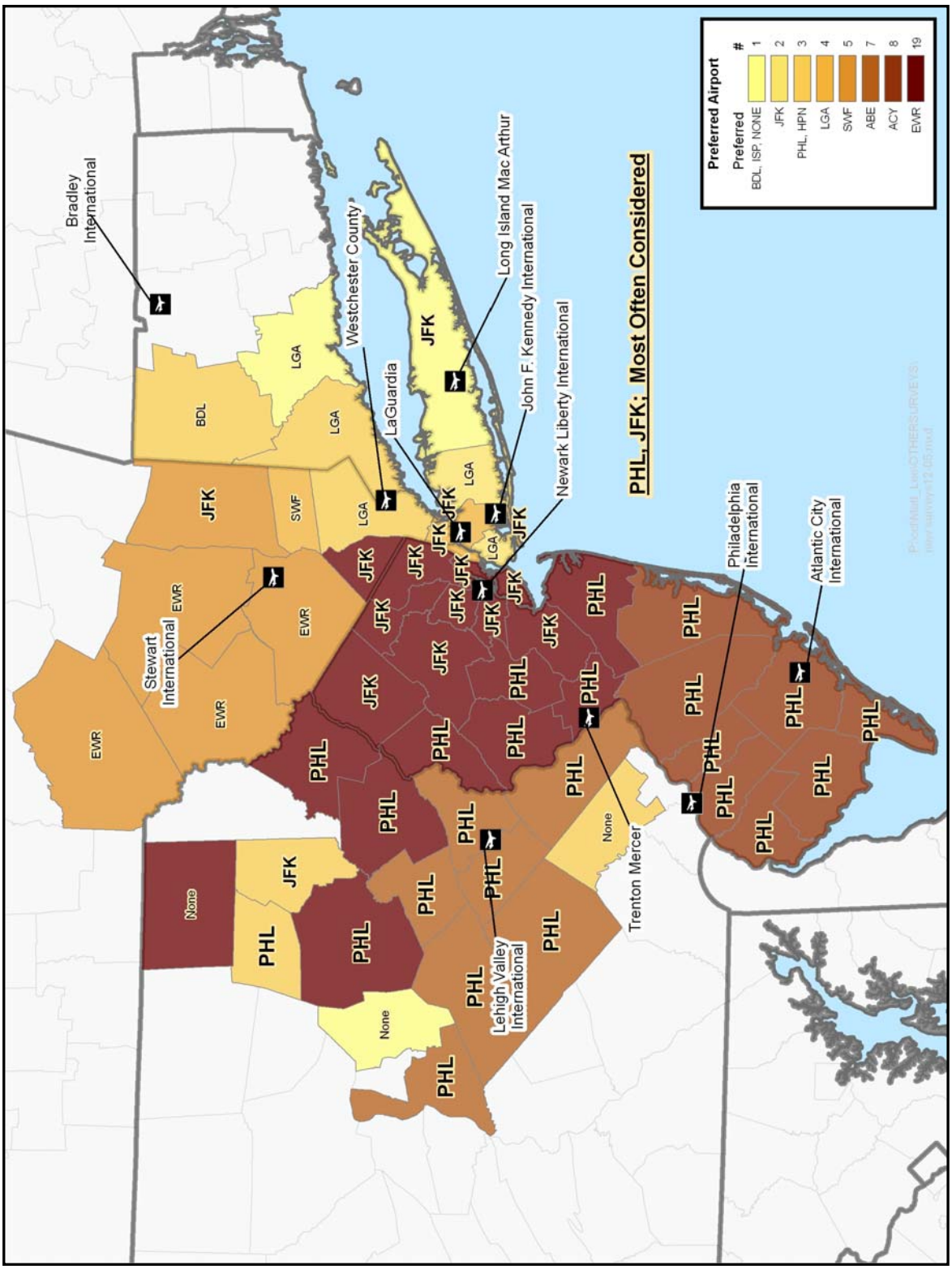
Table II-2
OTHER AIRPORTS CONSIDERED WHEN PLANNING TRIP

	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 HPN 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 HPN 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
HPN SOCIOECONOMIC VARIABLES

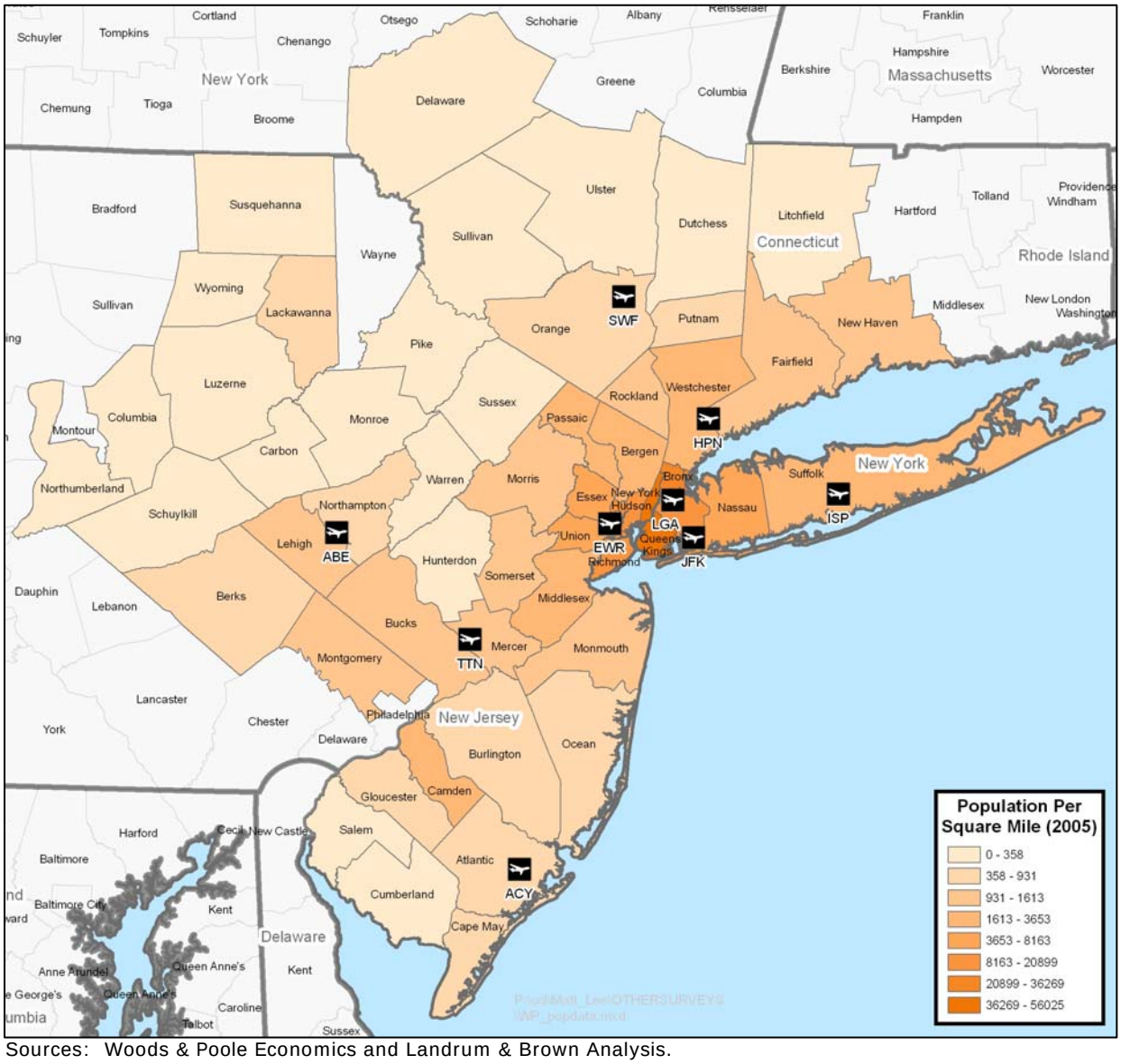
Calendar Year	Population (thousands)	Per Capita Personal Income ($1996)	Personal Income ($1996, millions)	Employment (thousands)	Gross Regional Product (GRP) ($2005, millions)
1985	2,742	$29,825	$81,781	1,474	$100,825
1990	2,798	$34,616	$96,861	1,551	$123,996
1995	2,881	$35,917	$103,471	1,524	$133,245
2000	3,001	$44,917	$134,778	1,670	$161,498
2005	3,113	$45,087	$140,367	1,758	$176,584
2010	3,216	$47,454	$152,626	1,848	$224,860
2015	3,329	$49,967	$166,322	1,938	$261,875
2020	3,447	$52,698	$181,651	2,028	$290,946
2025	3,573	$55,645	$198,817	2,118	$327,331
AAG:					
1985-1995	0.5%	1.9%	2.4%	0.3%	2.8%
1995-2005	0.8%	2.3%	3.1%	1.4%	2.9%
1985-2005	0.6%	2.1%	2.7%	0.9%	2.8%
2005-2025	0.7%	1.1%	1.8%	0.9%	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]HPN

III.1 POPULATION

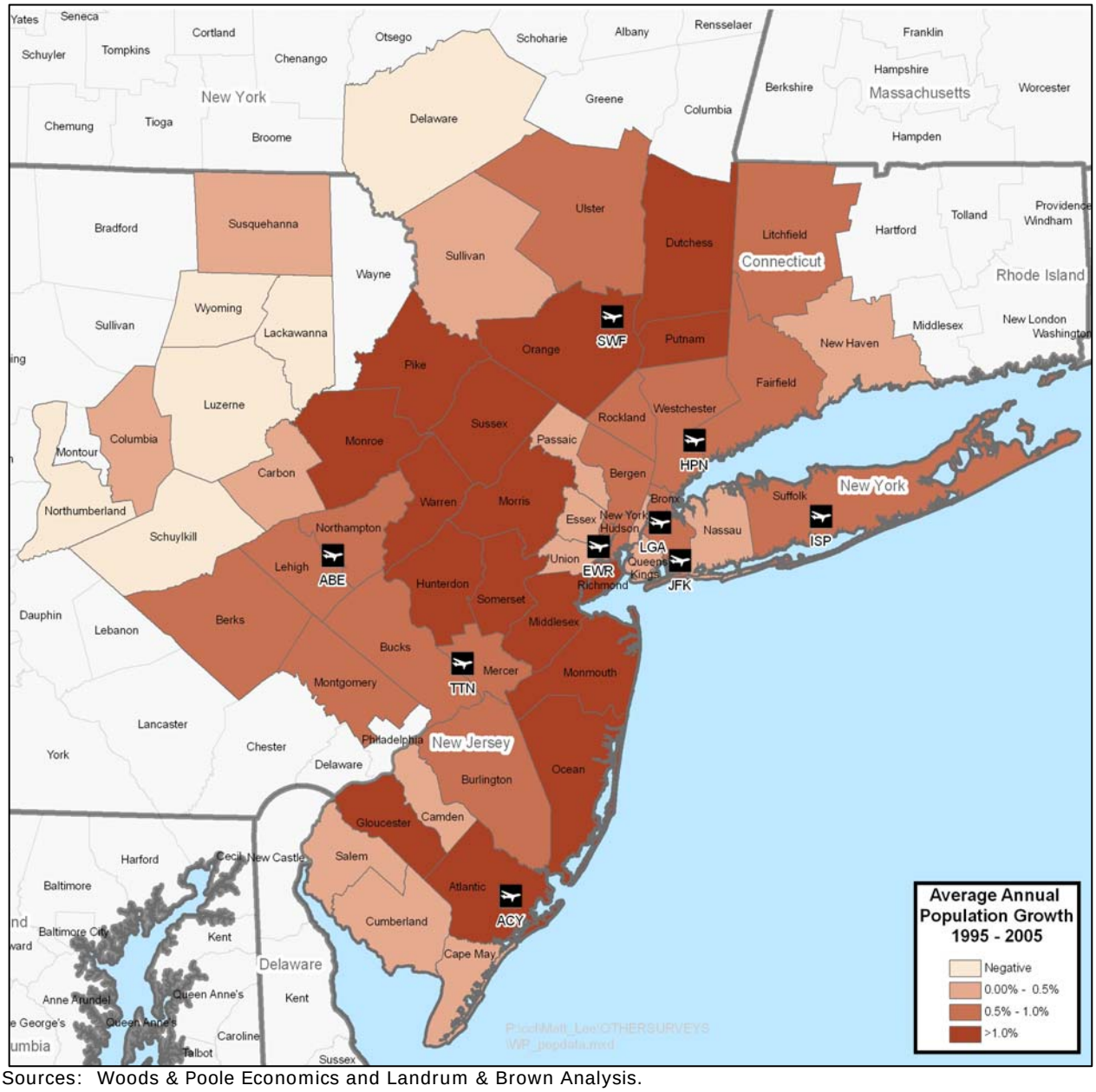
The HPN catchment area is made up of seven counties: Dutchess, Fairfield, Litchfield, Orange, Putnam, Rockland, and Westchester. In 2005, an estimated 3.1 million people lived in the HPN catchment area. Notably, almost 80 percent of the population in the catchment area resides in two counties (Fairfield and Westchester). The population of the HPN catchment averaged growth of 0.6 percent per year between 1985 and 2005 and is projected to grow at 0.7 percent per year, on average, over the next twenty years. **Exhibits III-1** through **III-3** summarize current and future population counts and growth in the HPN catchment area, along with data for the 54 county study area.

Exhibit III-1
POPULATION DENSITY (2005)



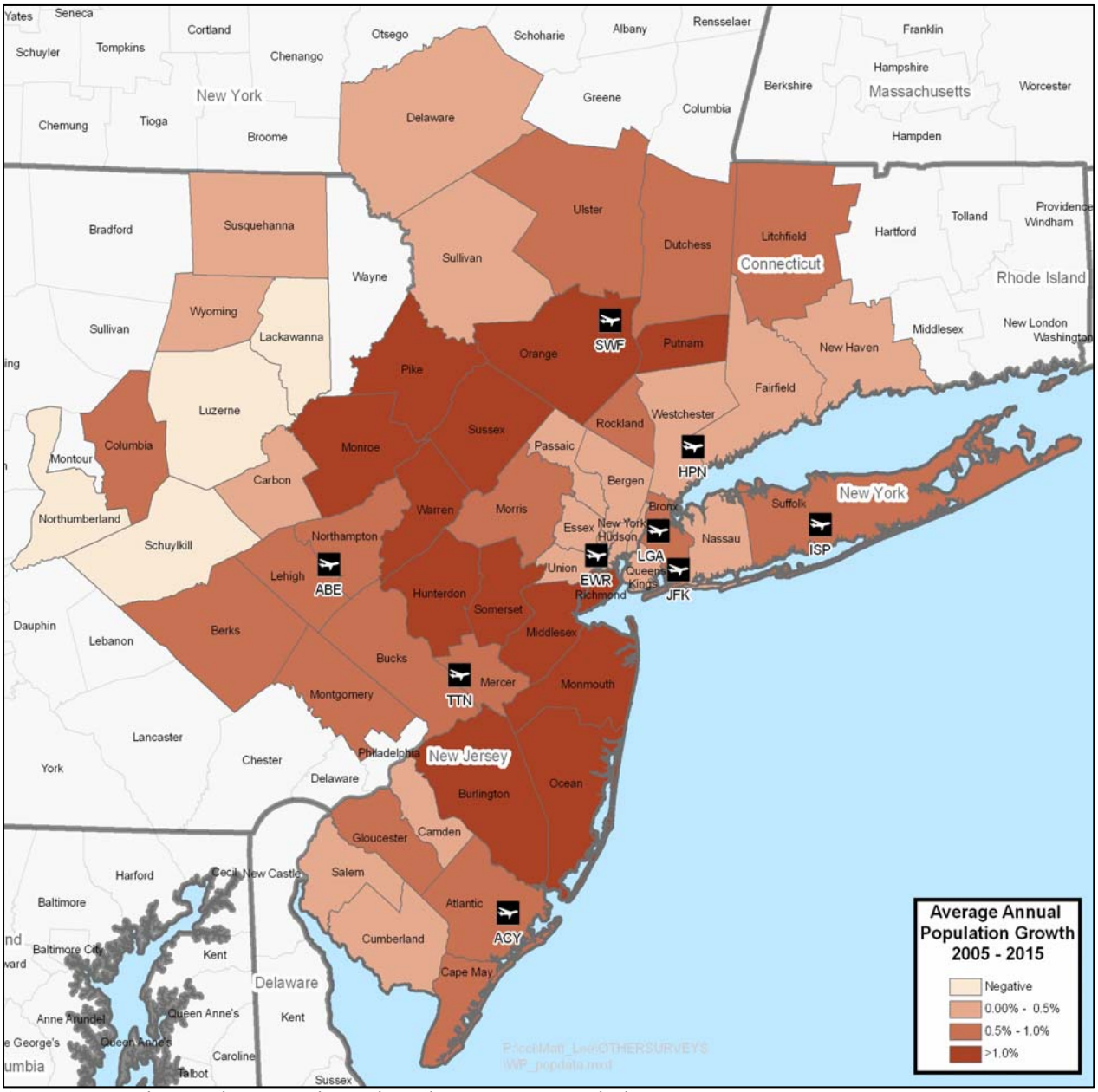
Sources: Woods & Poole Economics and Landrum & Brown Analysis.

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



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

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



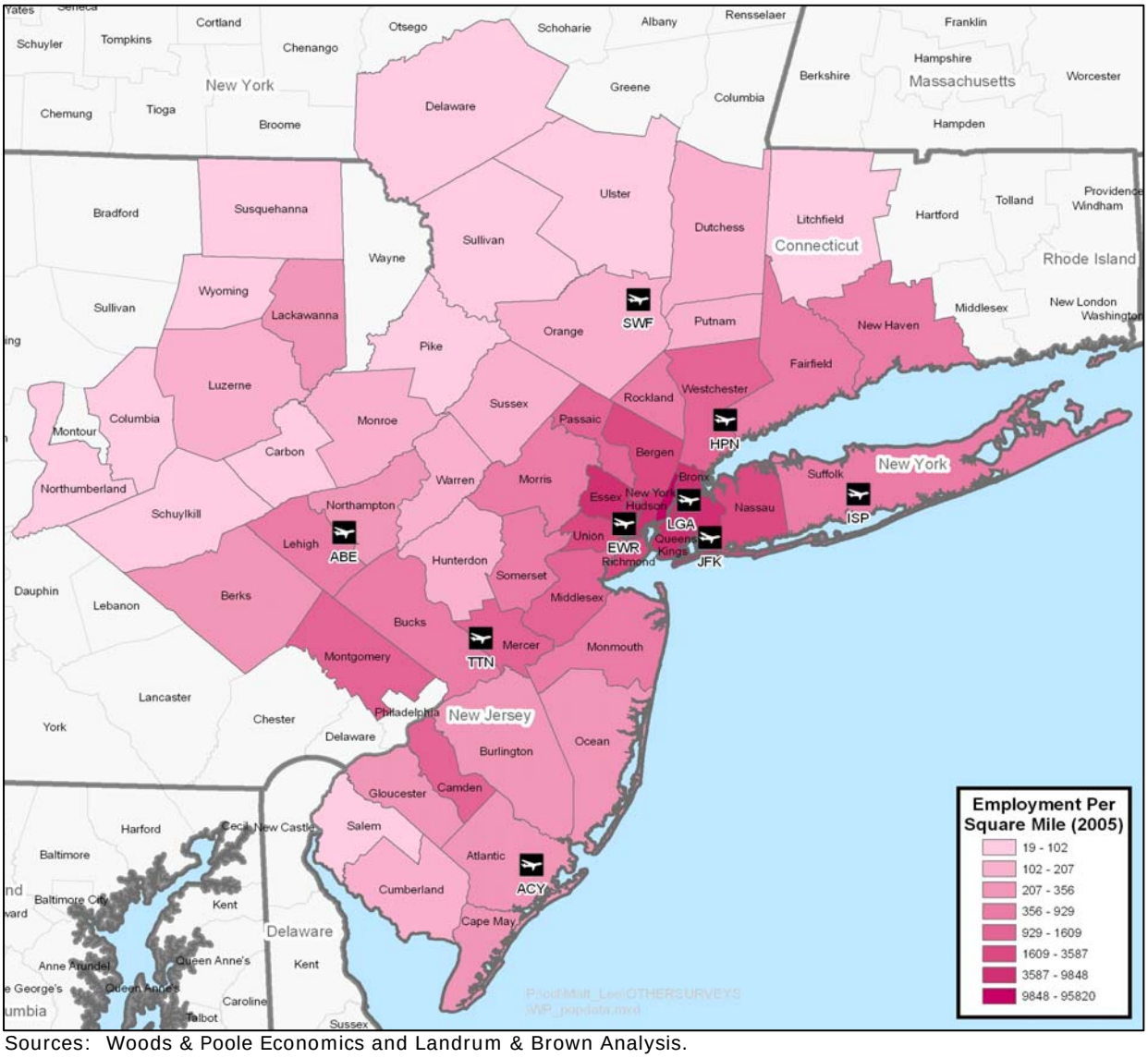
Sources: Woods & Poole Economics and Landrum & Brown Analysis.

III.2 EMPLOYMENT

Over the past twenty years, employment in the HPN catchment area averaged growth of 0.9 percent per year, reaching almost 1.8 million jobs by 2005. Similar to the population base, the majority of jobs in the HPN catchment area are located in Fairfield and Westchester counties. Projected employment growth over the next twenty years is expected to average 0.9 percent annually.

Exhibit III-4 summarizes 2005 employment per square mile ratios by county in the HPN 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

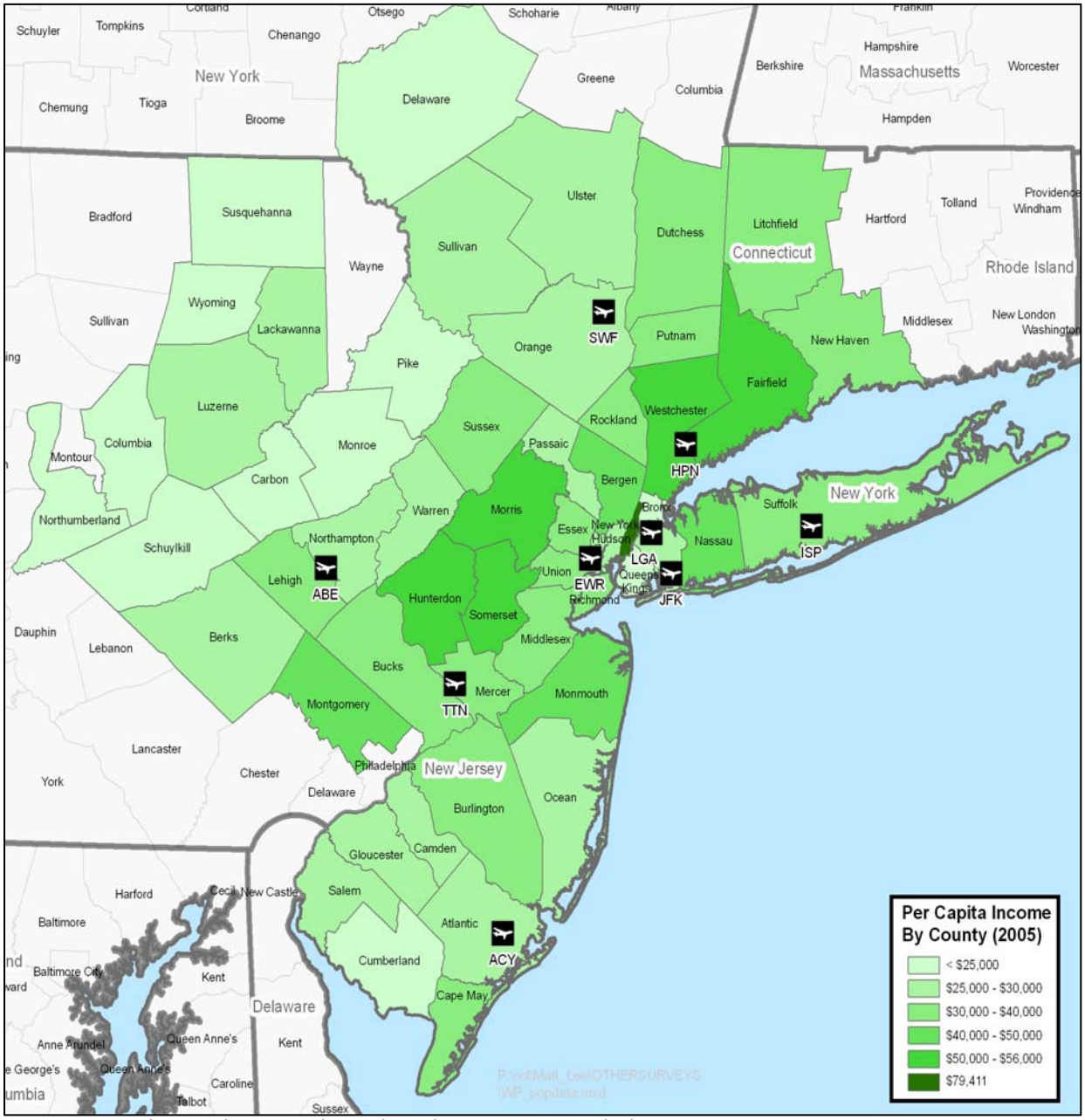
Personal income for the HPN air service area grew at a rate of 2.7 percent per year from 1985 to 2005. For the forecast period, personal income for the HPN catchment area is expected to increase at an average rate of 1.8 percent annually.

III.4 PER CAPITA PERSONAL INCOME (PCPI)

Inflation adjusted PCPI for the HPN catchment area was $45,087 in 2005; the highest of all catchment areas developed for the New York Regional Demand Study. PCPI for the HPN catchment area is expected to average growth of 1.1 percent per year through 2025, which is almost half the historical 20-year average annual growth rate (2.1 percent per year).

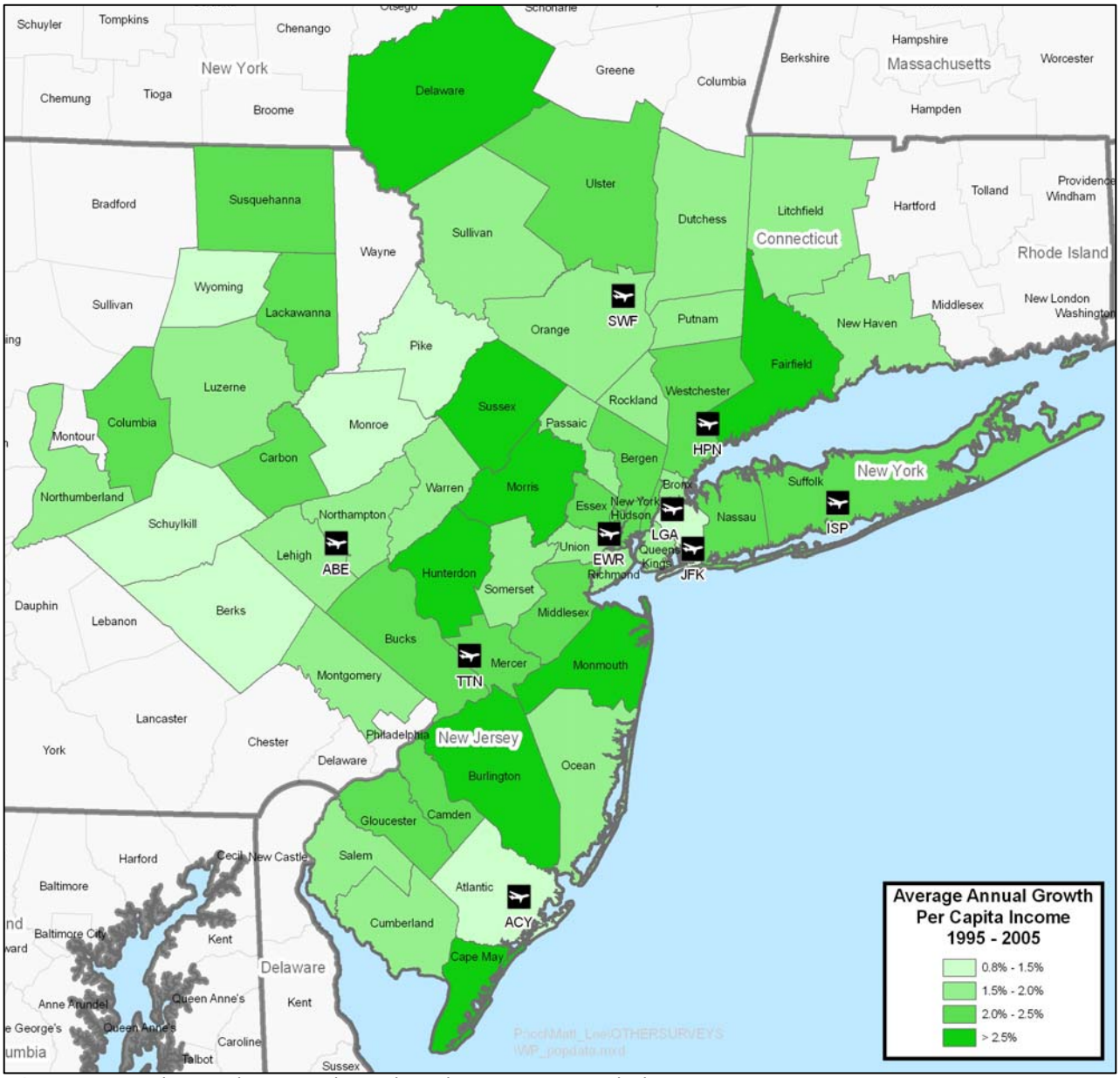
Exhibits III-5 through **III-7** summarizes 2005 PCPI and historical and forecast growth in PCPI by county in the New York region. Year 2005 PCPI levels are the highest in New York and Westchester counties in New York state, Fairfield county in Connecticut, and Morris, Hunterdon, and Somerset counties 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)



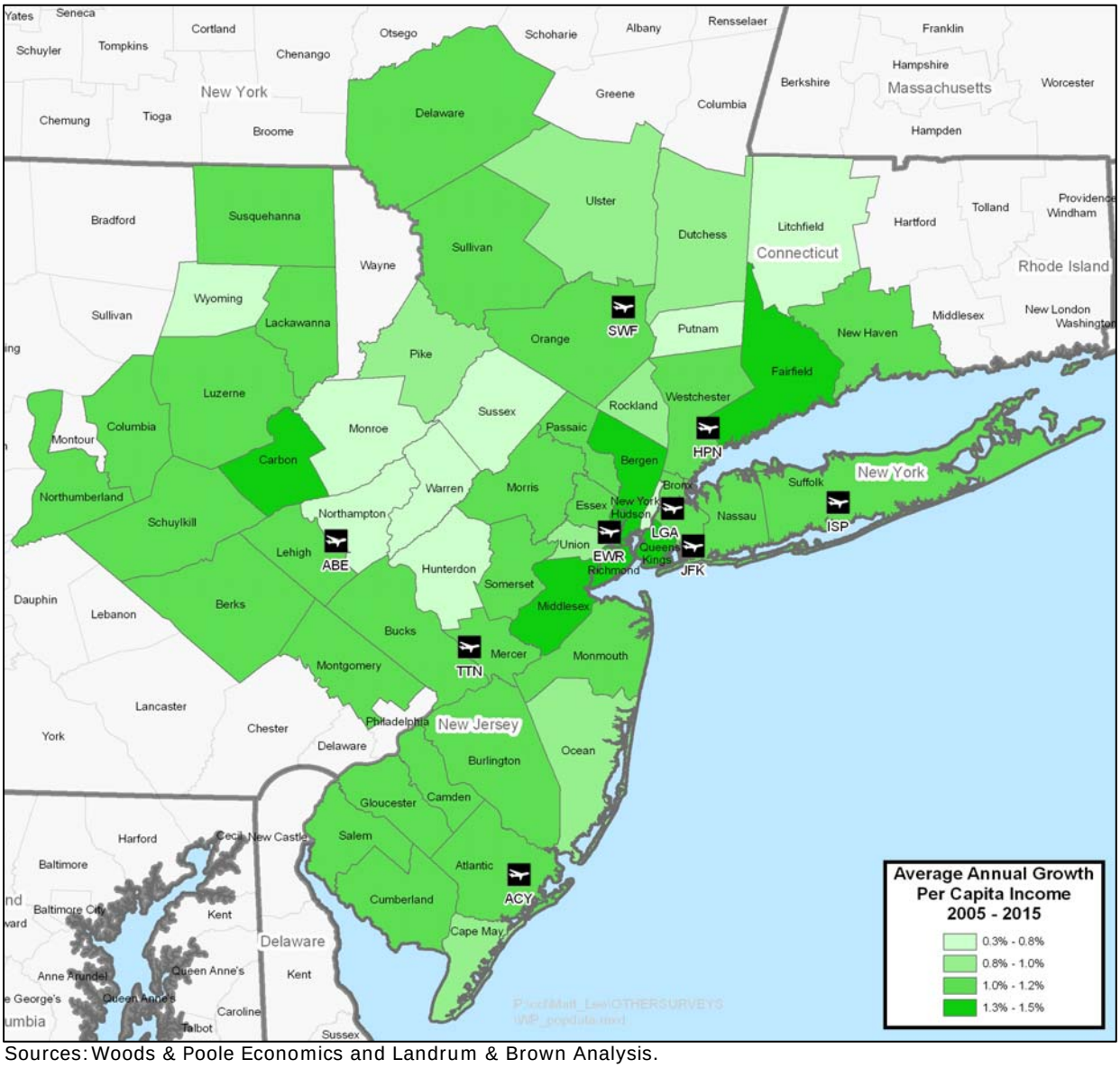
Sources: Woods & Poole Economics and Landrum & Brown Analysis.

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 GROSS REGIONAL PRODUCT (GRP)

GRP for the HPN air service area grew at a rate of 2.8 percent per year from 1985 to 2005. Over the same period, the U.S. economy as a whole grew at a similar rate, averaging growth of 3.1 percent per year. For the forecast period, GRP for the HPN catchment area is expected to increase at an average rate of 3.1 percent annually.

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

IV. PAST TRENDS IN AVIATION ACTIVITY

This section summarizes recent historical aviation activity at HPN. 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.

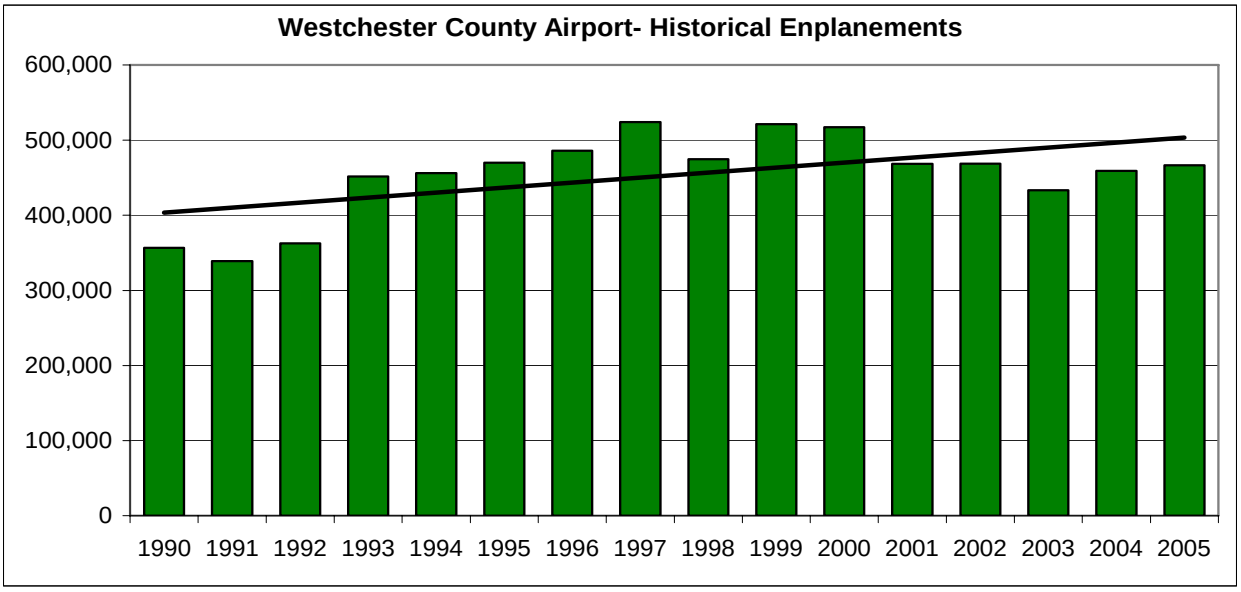
IV.1 SUMMARY OF HISTORICAL ENPLANED PASSENGERS

For almost 40 years, HPN has operated under a series of capacity constraints designed primarily to limit aircraft noise in the communities surrounding the airport. Between 1968 and 1984, air carriers were limited to 10 daily flight departures with no limitations on activity for commuter aircraft. From 1985, onwards, a contractual agreement between the airlines and Westchester County (referred to as "the Stipulation Agreement") superseded the previous capacity constraints and limited enplanements for both air carrier and commuter activity to 240 enplanements per half hour. In 2005, a law was signed similar to the agreed capacity restrictions that have been in place since 1985 at HPN. The new legislation formalized the following capacity constraints:

- 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,
- County control of ramp operations.

As shown in **Exhibit IV-1** and **Table IV-1**, between 1990 and 2005, there has generally been an upward trend in enplanement volumes at HPN. In 2005, 466,000 enplanements were recorded at HPN versus 357,000 enplanements in 1990, representing average annual growth of 1.8 percent. The historical trend line is shown on Exhibit IV-1. Over the 16-year period, legacy carriers and their regional affiliates have handled virtually all the passengers enplaned at HPN.

Exhibit IV-1
HPN ENPLANED PASSENGER TRENDS



Source: Airport Records.
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\HPN\[HPN Forecast Case v2.xls]Historical Enplanements
Note: Historical trend line shown for 1990 to 2005 period.

Table IV-1
HPN HISTORICAL ENPLANEMENT TRENDS

Calendar	Air Carrier		Commuter		Total	
Year	Enpax.	% of Tot.	Enpax.	% of Tot.	Enpax.	% of Tot.
1990	161,074	45.2%	195,429	54.8%	356,503	100.0%
1991	178,415	52.6%	160,460	47.4%	338,875	100.0%
1992	204,132	56.3%	158,215	43.7%	362,347	100.0%
1993	280,510	62.1%	171,179	37.9%	451,689	100.0%
1994	284,718	62.4%	171,207	37.6%	455,925	100.0%
1995	303,666	64.6%	166,234	35.4%	469,900	100.0%
1996	302,357	62.2%	183,637	37.8%	485,994	100.0%
1997	318,079	60.7%	205,990	39.3%	524,069	100.0%
1998	235,973	49.7%	238,912	50.3%	474,885	100.0%
1999	243,263	46.7%	278,068	53.3%	521,331	100.0%
2000	227,579	44.0%	289,780	56.0%	517,359	100.0%
2001	210,461	44.9%	257,760	55.1%	468,221	100.0%
2002	181,120	38.6%	287,715	61.4%	468,835	100.0%
2003	125,374	28.9%	307,889	71.1%	433,263	100.0%
2004	113,135	24.6%	346,090	75.4%	459,225	100.0%
2005	19,724	4.2%	446,704	95.8%	466,428	100.0%
Average Annual Growth Rate						
1990-1995	13.5%		-3.2%		5.7%	
1995-2000	-5.6%		11.8%		1.9%	
2000-2005	-38.7%		9.0%		-2.1%	
1990-2005	-13.1%		5.7%		1.8%	

Sources: Airport Records, DOT, Schedule T-100 and T-3.
H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\HPN\[HPN Template v2.xls]Commercial Passenge

IV.2 SUMMARY OF HISTORICAL AIRCRAFT OPERATIONS

For purposes of developing the operations forecast, HPN 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 all historical aircraft operations at HPN, thereafter this section focuses on historical trends in commercial passenger service at HPN. The operations history and forecast for the other four components of aircraft operations are discussed in Section VII**.**

Table IV-2
HPN HISTORICAL AIRCRAFT OPERATIONS

Calendar	Comm. Passenger		Total		Non-Comm	General		
Year	Air Carrier	Commuter	Passenger	All-Cargo	Air Taxi	Aviation	Military	Total
1995	11,940	32,938	44,878	0	2,858	152,086	370	200,192
1996	11,104	33,829	44,933	0	1,854	146,264	268	193,319
1997	11,340	33,607	44,947	0	4,982	149,207	227	199,363
1998	8,436	34,857	43,293	0	4,020	149,959	139	197,411
1999	8,982	39,839	48,821	0	10,009	163,089	355	222,274
2000	8,808	39,243	48,051	0	14,797	153,573	661	217,082
2001	9,256	37,307	46,563	0	22,583	135,311	96	204,553
2002	7,480	35,901	43,381	0	29,694	124,443	104	197,622
2003	4,766	36,731	41,497	0	29,298	117,222	80	188,097
2004	4,266	36,732	40,998	480	31,552	120,649	103	193,782
2005	725	37,587	38,312	520	32,286	122,457	331	193,906
Average Annual Growth Rates								
1995-2000	-5.9%	3.6%	1.4%	n/a	38.9%	0.2%	12.3%	1.6%
2000-2005	-39.3%	-0.9%	-4.4%	n/a	16.9%	-4.4%	-12.9%	-2.2%
1995-2005	-24.4%	1.3%	-1.6%	n/a	27.4%	-2.1%	-1.1%	-0.3%

Sources: FAA, Terminal Area Forecast; DOT, Schedule T-100; *Official Airline Guide* ; Landrum & Brown, Inc.
H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\HPN\[HPN Template v2.xls]Total Ops

During the period 1995 to 2005, commercial passenger operations have accounted for between 20 and 23 percent of total operations at HPN. In 2005, a total of 38,312 passenger operations were reported at the airport, which was 15 percent lower than the 44,878 passenger operations in 1995. Over the past ten years, service on mainline aircraft (predominantly Fokker-100, DC9, and B737-500 aircraft) has been transitioned to smaller regional jet aircraft. In 2005, air carrier operations accounted for just two percent of commercial passenger operations at HPN.

Table IV-3 presents daily scheduled passenger service for the month of August 1995, 2000, 2005, and 2006 by airline. In August 2006, an average of 56 daily flight departures are scheduled at HPN to thirteen domestic destinations and one international destination (Toronto, Canada).

Table IV-3
HPN AVERAGE DAILY COMMERCIAL PASSENGER SERVICE – AUGUST

	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	65	71	55	56	2,902	3,332	2,433	2,760	45	47	44	49	15	15	14	14
AirTran	-	-	-	5	-	-	-	585	-	-	-	117	-	-	-	3
United	10	9	8	9	649	733	483	522	63	77	57	58	2	2	2	2
US Airways	34	32	13	13	1,138	1,008	504	486	34	31	39	38	11	9	4	4
American	3	14	6	6	239	730	394	372	87	51	68	62	1	2	1	1
Delta	12	6	4	7	320	300	194	370	27	50	50	53	2	2	2	2
Continental	-	3	11	9	-	119	261	183	-	37	24	20	-	1	5	3
Northwest	5	6	6	4	548	441	333	177	100	79	59	44	2	2	2	2
Air Canada	-	-	3	3	-	-	66	64	-	-	19	19	-	-	1	1
ACA/ Independence Air	-	-	4	-	-	-	198	-	-	-	50	-	-	-	1	-
Other	1	-	-	-	8	-	-	-	8	-	-	-	1	-	-	-
AirTran	0%	0%	0%	9%	0%	0%	0%	21%								
United	16%	13%	15%	16%	22%	22%	20%	19%								
US Airways	52%	45%	23%	23%	39%	30%	21%	18%								
American	4%	20%	11%	11%	8%	22%	16%	13%								
Delta	18%	8%	7%	12%	11%	9%	8%	13%								
Continental	0%	5%	20%	16%	0%	4%	11%	7%								
Northwest	8%	8%	10%	7%	19%	13%	14%	6%								
Air Canada	0%	0%	6%	6%	0%	0%	3%	2%								
ACA/ Independence Air	0%	0%	7%	0%	0%	0%	8%	0%								
Other	2%	0%	0%	0%	0%	0%	0%	0%								

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

The six primary legacy carriers collectively continue to account for the majority of service at the airport (76 percent of departing seats in August 2006). However, AirTran, a recognized low cost carrier (LCC), is a new entrant at HPN as of April 2006, accounting for 21 percent of total departing seats in August 2006, more than any other airline individually.

The number of non-stop destinations served from the airport has remained relatively unchanged (14 airports in 2006 versus 15 airports in 1995). The legacy carriers have increasingly focused their service offerings around their primary hubs. US Airways in particular has dropped service to a number of short-haul destinations in the northeast such as Rochester, Syracuse, and Martha's Vineyard. The decline in the scope of legacy carrier service at HPN has been offset, albeit to different markets, by carriers such as Air Canada (Toronto) and most recently AirTran (Atlanta, Orlando, West Palm Beach).

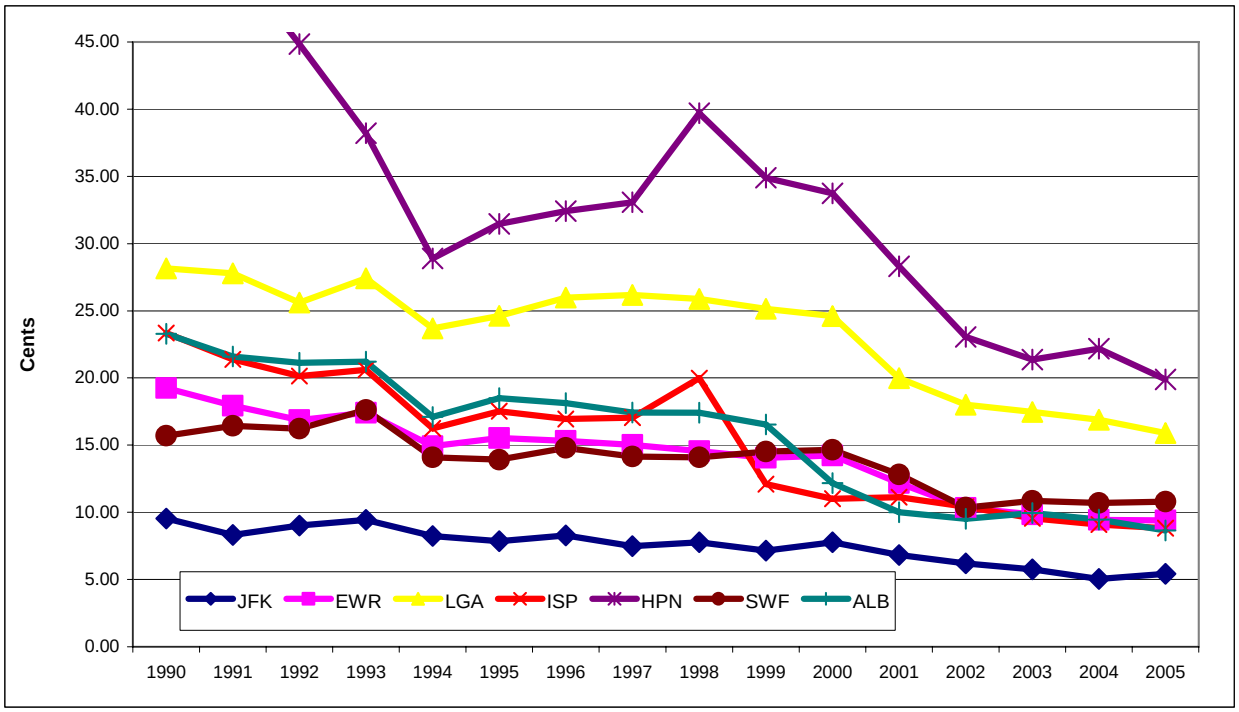
The average size of aircraft measured by seats has not changed materially over the past decade (45 seats per flight in August 1995 versus 49 seats per flight in August 2006). While this may seem to contradict the previous statement regarding the shift of mainline carrier operations to regional affiliates, it can be explained by the fact that there has also been upward movement in gauge among the regional carriers as they have shifted a significant amount of capacity from smaller turboprop aircraft to larger regional jets.

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.

Passengers that use HPN typically consider JFK, LGA, and SWF as their primary air service alternatives. Due to the capacity limitations at HPN that serve to restrict the supply of air service, air fares at HPN have historically been the highest in the study area by a significant margin (see **Exhibit IV-2**). However, there has been a significant decline in HPN air fares since the later 1990s and this is likely to continue, particularly in the near term with AirTran beginning service in 2006.

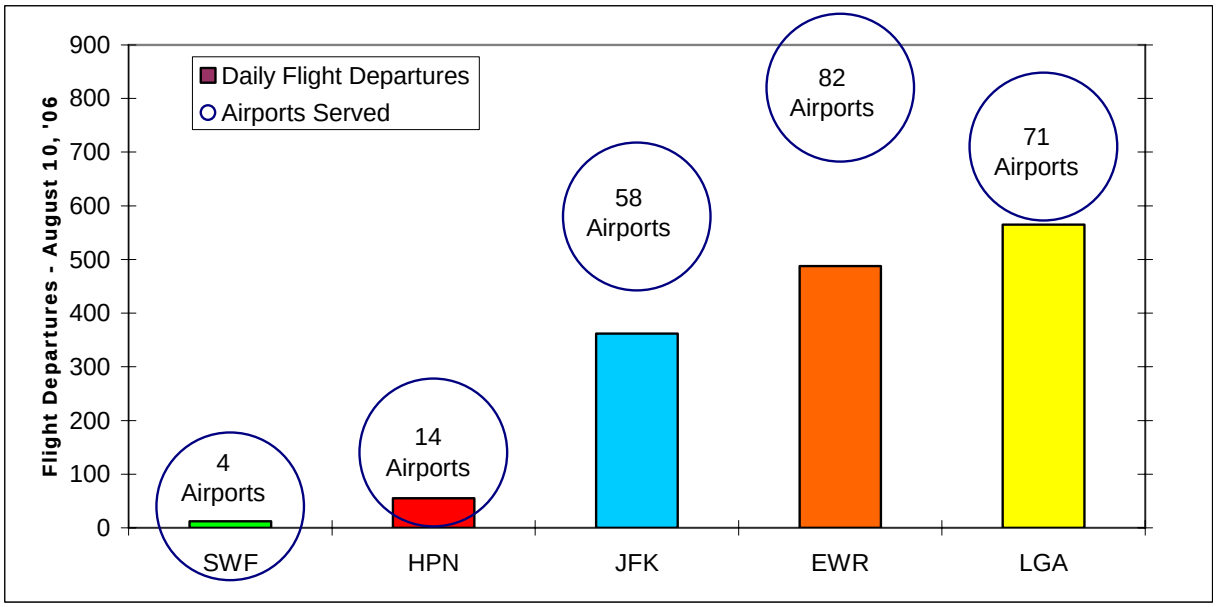
Exhibit IV-2
DISTANCE ADJUSTED FARE YIELD PER 1,000 MILE TRIP
(cents per mile; in 2005 dollars)



Sources: DOT, *Air Passenger Origin-Destination Survey.*
H:\New York System Forecast\O&D Data\[NYC Fcst Airports Base Avg Report 85-04 + 05 & ALB.xls]Yield85-05

Exhibit IV-3 summarizes daily domestic frequencies and number of airports served at HPN versus select competing airports.

Exhibit IV-3
SERVICE AND FARE COMPARISON:
HPN AND SELECT COMPETING AIRPORTS



Source: Official Airline Guide.
H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\[Air Service Competition Graphics.xls]HPN

Filepath: H:\New York System Forecast\Documents\NYSDOT\2nd Draft\HPN\IV. HPN Past Trends in Aviation Activity.

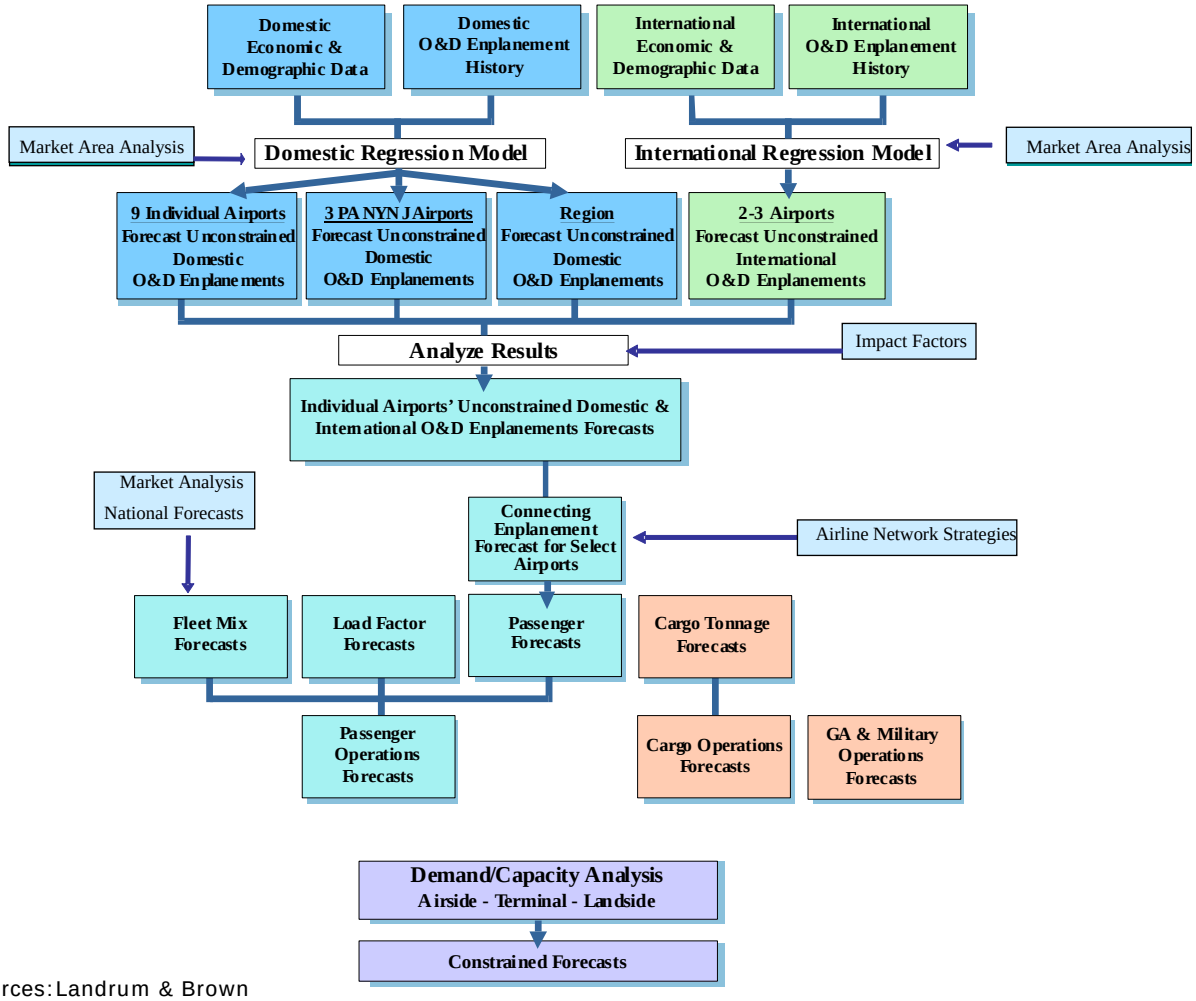
V. FORECASTING METHODOLOGY AND ASSUMPTIONS

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

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



Sources: 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 HPN FORECAST ASSUMPTIONS

Although the legislated capacity constraints at HPN and the irregular pattern of historical enplaned passengers make a regression forecast infeasible, there has been a general upward trend in enplanement volumes based on a 15-year time series. Growth in the catchment area economy is expected to support organic growth in passengers. Therefore, enplaned passengers were forecast to grow at the projected growth rate of the study area population and employment.

The HPN forecast for this study assumes forecasted AirTran Airlines passengers will be partially "stimulated" (i.e. passengers that would not otherwise have flown if not for the service and low fares offered by AirTran). Based on the passenger survey results and the general pattern observed when an LCC initiates service at an airport, it is assumed that two-thirds of the growth in AirTran passengers will be stimulated. The remaining passengers are expected to be pirated from existing airlines at HPN.

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VI. ENPLANED PASSENGERS FORECASTS

This section provides summaries of the forecasts of passenger demand at HPN. 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.

Airlines provide spoke and point-to-point service at the airport and therefore only a handful of connections are made at HPN during each year. Thus total enplanements are used as an accurate estimate of O&D enplanements for the airport. The airport also has had continuous international commuter service since 2001.

Two forecasts were developed for HPN. The base case forecast was based on a continuation of the airport's current role. It is important to note that air service regulations at HPN will play a crucial role and will constrain the base case enplanement forecast at the airport. A pessimistic enplanement forecast was also developed to demonstrate the range of activity that is possible at HPN over the 20-year planning horizon.

VI.1 DOMESTIC AND INTERNATIONAL ENPLANED PASSENGERS

The forecast for HPN domestic enplaned passengers, segregated into air carrier and commuter categories, is summarized in **Table VI-1**. The base case is based upon organic economic growth in the region plus AirTran service activity at the airport from 2006. It is assumed that 67 percent of AirTran passengers will be new passengers from the region and the rest pirated from existing carriers. Total enplanements at the airport are forecast to increase from 466,428 in 2005 to 657,300 in 2025. This represents a 1.7 percent annual average growth during the forecast period.

Table VI-1
HPN ENPLANED PASSENGER FORECAST

	Calendar Year	Domestic Air Carrier	Domestic Commuter	International Commuter	Total Enplanements
Historical	1995	303,666	166,234	0	469,900
	2000	227,579	289,780	0	517,359
	2005	19,724	434,725	11,979	466,428
Estimate	2006	103,922	429,743	13,291	546,956
Forecast	2007	149,900	436,260	13,440	599,600
	2008	151,750	442,370	13,580	607,700
	2009	153,180	447,240	13,680	614,100
	2010	154,300	451,250	13,750	619,300
	2011	155,250	454,750	13,800	623,800
	2012	156,050	457,810	13,840	627,700
	2013	156,740	460,580	13,880	631,200
	2014	157,330	463,070	13,900	634,300
	2015	157,850	465,330	13,920	637,100
	2020	159,800	474,860	13,940	648,600
	2025	161,040	482,360	13,900	657,300
	Average Annual Growth Rates				
	1995-2005	-23.9%	10.1%	-	-0.1%
	2005-2015	23.1%	0.7%	1.5%	3.2%
	2015-2025	0.2%	0.4%	0.0%	0.3%
	2005-2025	11.1%	0.5%	0.7%	1.7%

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Sources: U.S. DOT T100; T3 and Landrum & Brown Analysis
Note: Air Carrier includes charter enplanements

Domestic Enplanements

Air carrier growth is expected to drive total enplanement growth at HPN with an average annual increase of 11.1 percent, from approximately 20,000 enplanements in 2005 to 161,000 by 2025.

Domestic commuter enplanements are also expected to grow at HPN but at a much slower pace, from 434,725 in 2005 to 482,360 by 2025. The resulting growth rate is forecast to be 0.5 percent per year.

International Enplanements

It is unlikely that any new carriers will provide international service at the airport during the forecast period. International enplanements at HPN are forecasted from expected Air B.C. regional service during the 20 year period. International enplanements are forecast to grow at 0.7 percent annually from 12,000 enplanements in 2005 to just below 14,000 enplanements by the end of the forecast period.

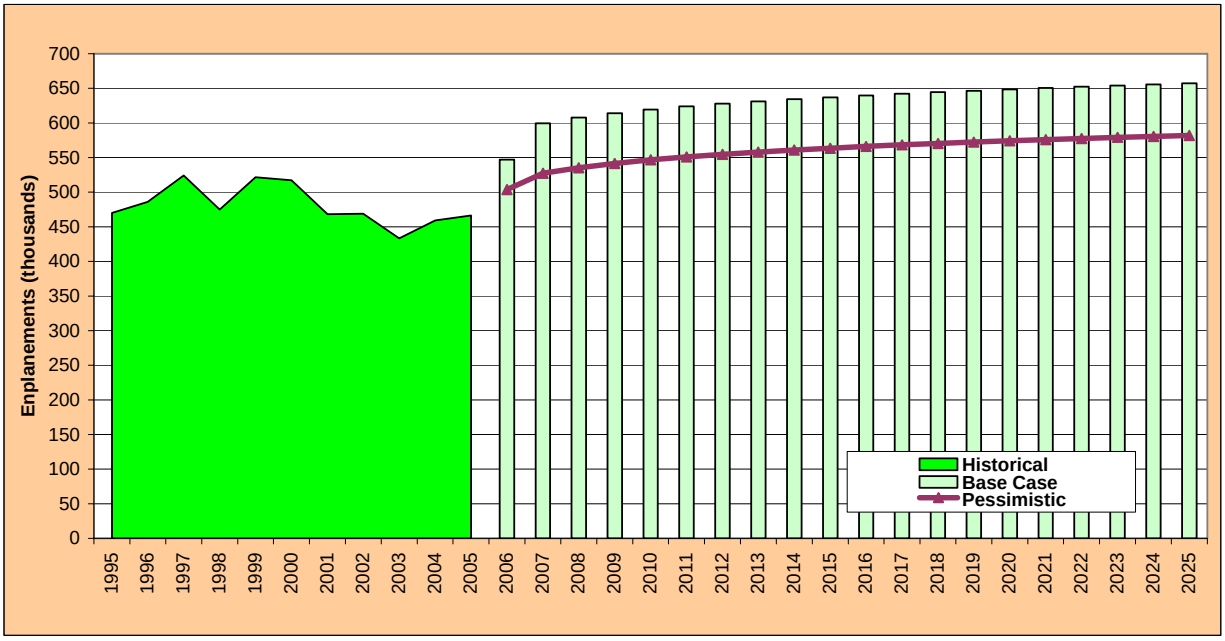
VI.2 ENPLANED PASSENGERS – PESSIMISTIC SCENARIO

An optimistic enplanement scenario is not feasible at HPN given its current air service restrictions. It is unlikely that these regulations will be eliminated during the forecast period.

Conversely, the pessimistic enplanement forecast is simulated by changing the passenger base to reduce the number of new passengers using HPN primarily for AirTran service. Here, it is assumed that only 20 percent of the airline's passengers will be new. The remaining 80 percent are assumed to be passengers already using other air service at HPN.

Exhibit VI-1 and **Table VI-2** present the base case and pessimistic enplanement forecasts at HPN.

Exhibit VI-1
HPN ENPLANED PASSENGER FORECAST SCENARIOS



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Source: Landrum & Brown Analysis

Table VI-2
HPN ENPLANED PASSENGER FORECAST SCENARIOS

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	469,900		
	2000	517,359		
Estimate	2005	466,428		
Estimate	2006	546,956	n/a	503,813
Forecast	2007	599,600	n/a	527,300
	2008	607,700	n/a	535,300
	2009	614,100	n/a	541,500
	2010	619,300	n/a	546,600
	2011	623,800	n/a	550,900
	2012	627,700	n/a	554,600
	2013	631,200	n/a	557,900
	2014	634,300	n/a	560,900
	2015	637,100	n/a	563,600
	2016	639,800	n/a	566,000
	2017	642,200	n/a	568,300
	2018	644,500	n/a	570,400
	2019	646,600	n/a	572,400
	2020	648,600	n/a	574,200
	2021	650,500	n/a	575,900
	2022	652,300	n/a	577,600
	2023	654,100	n/a	579,100
	2024	655,700	n/a	580,600
	2025	657,300	n/a	582,000
Average Annual Growth Rates				
	1995-2005	-0.1%		
	2005-2015	3.2%		1.9%
	2015-2025	0.3%		0.3%
	2005-2025	1.7%		1.1%

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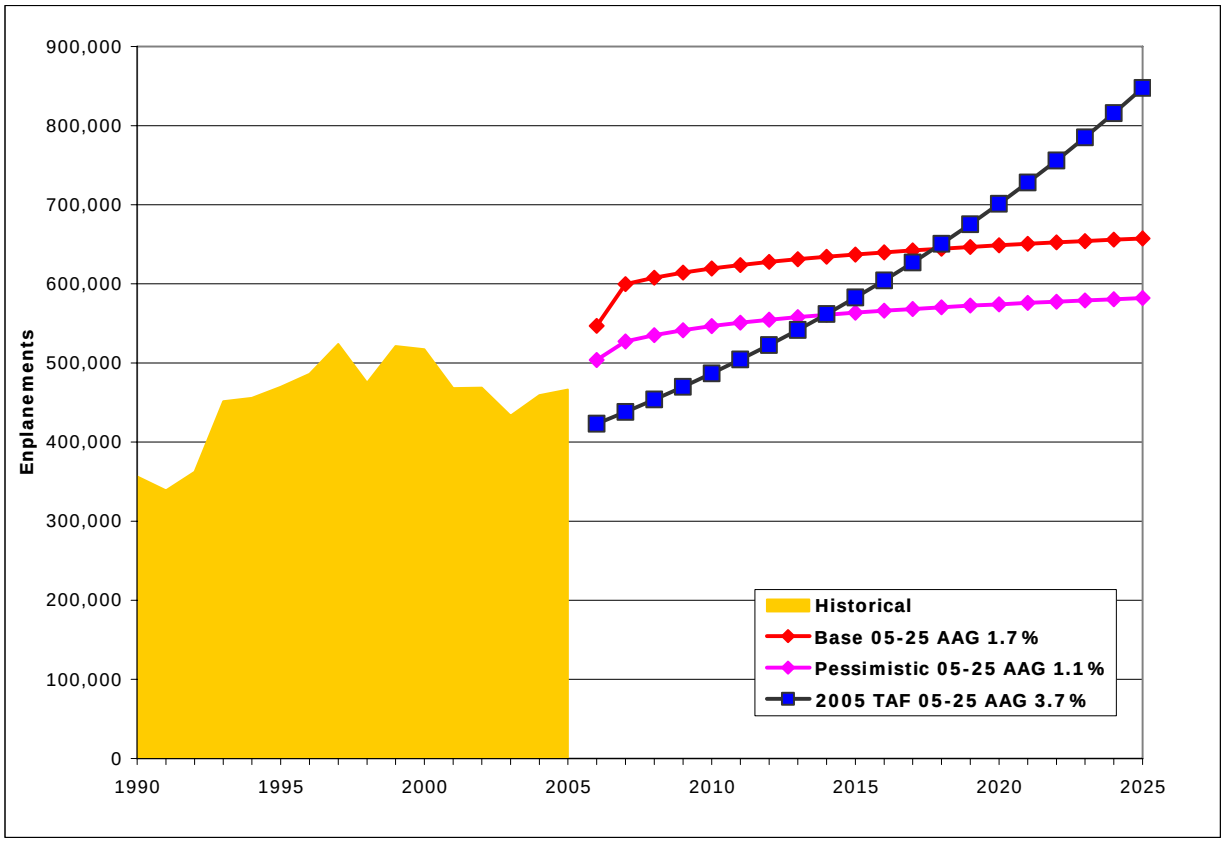
Source: Landrum & Brown Analysis

VI.3 COMPARISON OF FORECAST RANGE TO FAA 2005 TAF

Exhibit VI-2 allows comparison of the base and low enplaned passenger forecasts to the FAA Terminal Area Forecast (TAF) for HPN. The TAF 2005 enplanement estimate is lower than actual enplanements at the airport. Additionally, it is unlikely that the FAA considered service initiation by AirTran in 2006. Due to these reasons the TAF enplanements are lower than the base case during the first 12 years of the forecast. Never the less, TAF enplanements grow at a robust 3.7 percent compared to 1.7 percent for the base forecast and passes base case levels in 2017. By 2025, TAF enplanements are over 29 percent higher than the base case forecast enplanements and 46 percent above the pessimistic scenario forecast enplanements.

Exhibit VI-2
HPN ENPLANED PASSENGER FORECASTS AND FAA 2005 TAF



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Sources: FAA 2005 TAF and 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 HPN. 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 (70 seat or smaller) 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.

HPN experienced an average annual decline of 1.6 percent in commercial passenger operations from 44,878 in 1995 to 38,312 in 2005.

VII.1.1 Domestic Passenger Operations

This section summarizes the domestic air carrier and commuter operations forecasts.

Domestic Air Carrier Operations

In 2005, a total of 725 air carrier operations were reported by passenger airlines at HPN, versus 11,940 in 1995. Legacy carriers, which have historically provided virtually all the air service at HPN, have replaced mainline service with smaller aircraft operated by their regional affiliates. During 2005, American and Northwest pulled out the last of legacy mainline service. However, air carrier operations are expected to increase in 2006 with the introduction of Boeing 717 service by AirTran Airways.

For purposes of developing the forecast, it is assumed that legacy carriers are unlikely to reintroduce mainline service at HPN over the forecast period and AirTran will account for all of the passenger air carrier activity at HPN. As a result, APSD is projected to be 117 seats for the air carrier category over the forecast period, reflecting AirTran's Boeing 717 aircraft configured with 117 seats (see **Table VII-1**).

Air carrier load factors at HPN have generally been significantly lower than the national average. However, air carrier load factors have exhibited an upward trend at HPN over the past decade as airlines have made more effective use of their assets at the airport. With AirTran beginning service in 2006, air carrier load factors are expected to increase substantially at HPN. For 2025, an air carrier load factor of 74 percent is projected.

The result of the foregoing assumptions regarding load factor and ASPD is that air carrier operations are forecasted to increase from 725 in 2005 to 3,720 operations in 2025, representing an average annual growth rate of 8.5 percent.

Domestic Commuter Operations

Domestic commuter operations at HPN increased from 32,938 operations in 1995 to a peak of almost 40,000 commuter operations in 1999. By 2005, commuter operations had declined to 35,436 operations. Much of the decline was due to regional airlines shifting to larger aircraft; as a result they were able to provide more capacity (departing seats) but with fewer operations. In 2006, commuter operations are expected to decline 13 percent due to Independence Air's cessation of service in the first week of 2006 and Continental's decision to cut service to Baltimore, Buffalo, and Albany.

Table VII-1
HPN DOMESTIC AIRCRAFT GAUGE AND LOAD FACTOR ASSUMPTIONS

		Air Carrier			Regional - Domestic		
	Calendar Year	ASPD	Load Factor	Enpl./ Dep.	ASPD	Load Factor	Enpl./ Dep.
Actual	1995	102.8	49.5%	50.9	26.3	38.3%	10.1
	2000	99.3	52.0%	51.7	33.9	43.5%	14.8
	2001	96.3	47.2%	45.5	35.7	38.5%	13.7
	2002	95.7	50.6%	48.4	37.5	42.2%	15.8
	2003	88.9	59.2%	52.6	36.8	45.4%	16.7
	2004	95.0	55.8%	53.0	39.2	48.8%	19.1
	2005	115.5	47.1%	54.4	43.7	56.2%	24.5
Estimate	2006	117.0	69.5%	81.3	45.0	61.8%	27.8
Forecast	2007	117.0	72.0%	84.2	45.2	62.0%	28.0
	2008	117.0	72.1%	84.4	45.3	62.0%	28.1
	2009	117.0	72.2%	84.5	45.5	62.0%	28.2
	2010	117.0	72.3%	84.6	45.7	62.0%	28.3
	2011	117.0	72.4%	84.8	45.8	62.0%	28.4
	2012	117.0	72.6%	84.9	46.0	62.0%	28.5
	2013	117.0	72.7%	85.0	46.1	62.0%	28.6
	2014	117.0	72.8%	85.1	46.3	62.0%	28.7
	2015	117.0	72.9%	85.3	47.0	62.0%	29.1
	2020	117.0	73.4%	85.9	47.6	62.0%	29.5
	2025	117.0	74.0%	86.6	48.1	62.0%	29.8
Average Annual Growth Rates							
	1995-2005	1.2%	-0.5%	0.7%	5.2%	3.9%	9.3%
	2005-2015	0.1%	4.5%	4.6%	0.7%	1.0%	1.7%
	2015-2025	0.0%	0.2%	0.2%	0.2%	0.0%	0.2%
	2005-2025	0.1%	2.3%	2.3%	0.5%	0.5%	1.0%

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Source: Landrum & Brown Analysis

Notes: ASPD = average seats per departure (gauge); load factor = average percentage of seats filled; Enpl / Dep = enplanements per departure

Over the 10-year period from 1995 to 2005, ASPD for domestic commuter carriers increased from 26 to almost 44 seats. The trend toward larger aircraft is expected to continue as commuter carriers seek to reduce unit costs by spreading operating costs over a greater number of seats. It is also expected that more flexible pilot union scope clauses will help regional airlines operate larger regional aircraft in the future. Nevertheless, a significant up-gauging of the regional fleet at HPN in the future is not expected due to constraints which limit the number of enplanements per half hour. Hence, regional aircraft gauge at HPN is expected to increase slowly to 48 seats per departure by 2025.

Commuter load factors are typically lower than air carrier load factors and this has certainly been the case at HPN. In 2005, load factors on commuter flights were 56 percent, up from 38 percent ten years earlier. Domestic commuter load factors are expected to reach 62 percent by 2007 and remain constant for the remainder of the forecast period.

Based on the projected commuter ASPD and load factor assumptions, domestic commuter operations are expected to sharply decline in 2006, due to the demise of Independence Air and reduced service by Continental, but grow thereafter. Total operations for the domestic commuter segment are expected to be 32,350 by 2025.

VII.1.2 International Passenger Operations

This section summarizes the base case international passenger operations forecast at HPN.

International Commuter Operations

Prior to 2001, the only international activity at the airport was occasional non-scheduled charter flights by airlines such as Carnival, Champion Air, and Pace Aviation. In 2001, both Continental Express and Air Canada initiated scheduled service to Toronto from HPN, using commuter aircraft. Continental ceased service to Toronto in 2003, leaving Air Canada as the sole provider of Transborder service from HPN.

ASPD and load factor assumptions for international commuter operations are shown in **Table VII-2**. ASPD for international commuters has exhibited a downward trend. By 2005, ASPD had declined to 19 seats, with Air Canada providing service with Beech 1900 aircraft through its Air Georgian/Air Alliance affiliate. With no new service or change in gauge planned for 2006, it is assumed that ASPD will remain at 19 seats during the forecast period.

International commuter load factors have been slightly higher than their domestic counterparts. In 2005, load factors for the segment were 59 percent, up from 40 percent four years earlier. This upward trend in load factor is expected to continue and reach 61 percent by the end of 2025.

Based on the projected international commuter ASPD and load factor assumptions, commuter operations are expected to slightly grow at the beginning of the forecast period and decline thereafter. It is expected that total operations for the segment will reach 2,400 by 2025, up from 2,150 operations in 2005.

Table VII-2
HPN INTERNATIONAL AIRCRAFT GAUGE AND LOAD FACTOR ASSUMPTIONS

		Regional - International		
	Calendar Year	ASPD	Load Factor	Enpl./ Dep.
Actual	1995	n/a	n/a	n/a
	2000	n/a	n/a	n/a
	2001	38.5	40.2%	15.5
	2002	42.4	44.1%	18.7
	2003	38.0	47.4%	18.0
	2004	27.3	51.0%	13.9
	2005	19.0	58.7%	11.1
Estimate	2006	19.0	58.8%	11.2
Forecast	2007	19.0	60.0%	11.4
	2008	19.0	60.1%	11.4
	2009	19.0	60.1%	11.4
	2010	19.0	60.2%	11.4
	2011	19.0	60.2%	11.4
	2012	19.0	60.3%	11.5
	2013	19.0	60.3%	11.5
	2014	19.0	60.4%	11.5
	2015	19.0	60.4%	11.5
	2020	19.0	60.7%	11.5
	2025	19.0	61.0%	11.6
Average Annual Growth Rates				
	1995-2005	n/a	n/a	n/a
	2005-2015	0.0%	0.3%	0.3%
	2015-2025	0.0%	0.1%	0.1%
	2005-2025	0.0%	0.2%	0.2%

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Source: Landrum & Brown Analysis
Notes: ASPD = average seats per departure (gauge); load factor = average percentage of seats filled; Enpl / Dep = enplanements per departure

VII.1.3 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, historically only narrow-body jets have operated at the airport. This is not expected to change in the foreseeable future, as no new air

carriers are expected to initiate service. The only airline currently in the category, AirTran, operates narrow-body B-717s exclusively at HPN.

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. Size of turboprop aircraft at the airport range from 19-seat Beech1900s to DHC8-300 aircraft with 50 seats.

The allocation of commercial passenger operations by aircraft type is shown in **Table VII-3**. The primary assumptions underpinning the fleet mix forecast are:

- Narrow-body B-717 aircraft will account for all of air carrier operations.
- Regional airlines have been operating large regional jets at HPN since 1998. It is assumed that the operational cost advantages of these aircraft over smaller regional jets will make these aircraft increasingly attractive to commuter airlines and their mainline partners. This trend is expected to continue over the forecast period.
- 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. Nevertheless at HPN, from 2000 to 2006, small regional jet operations share increased from 11 percent to almost 43 percent of total passenger operations. The main reason for this is many regional airlines operating at the airport up-gauged their turboprop operations to small regional jet operations. Notably, the small jet segment is expected to decline as a share of total operations in 2006 to 35.6 percent, primarily due to Independence Air ceasing CRJ service in early 2006. Thereafter, small regional jet operations are expected to account for a relatively constant share of passenger operations, as airlines continue to up-gauge from turboprop to small regional jet and in turn from small regional jet to larger regional jet aircraft.
- Regional airlines operating at HPN have indicated a preference for jet aircraft over turboprop aircraft as indicated by the 52 percent decline in turboprop activity at HPN between 2000 and 2005. Over the forecast period, it is assumed that turboprop activity will decline both in absolute terms and as a share of passenger operations. However, due to capacity constraints, both in terms of operations and passenger traffic which serve to limit aircraft size, turboprop activity is not expected to disappear entirely at HPN. In 2025, approximately 12,000 turboprop operations are forecast, representing 31 percent of passenger operations at HPN.

Table VII-3
HPN COMMERCIAL PASSENGER OPERATIONS—FLEET MIX

Aircraft		Acft.	Aircraft Operations							% of Total Aircraft Operations						
Type	Model	Gauge	2000	2005	2006	2010	2015	2020	2025	2000	2005	2006	2010	2015	2020	2025
Narrow Body Jet																
	100	90	4,440	-	-	-	-	-	-	8.6%	-	-	-	-	-	-
	733	120	96	-	-	-	-	-	-	0.2%	-	-	-	-	-	-
	735	116	3,970	-	-	-	-	-	-	7.7%	-	-	-	-	-	-
	738	148	-	338	-	-	-	-	-	-	0.8%	-	-	-	-	-
	D9S	100	1,426	400	-	-	-	-	-	2.8%	1.0%	-	-	-	-	-
	DC9	100	94	-	-	-	-	-	-	0.2%	-	-	-	-	-	-
	F28	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	717	117	-	-	2,594	3,650	3,700	3,720	3,720	-	-	7.0%	9.6%	9.7%	9.7%	9.7%
			10,026	**738**	**2,594**	**3,650**	**3,700**	**3,720**	**3,720**	**19.4%**	**1.8%**	**7.0%**	**9.6%**	**9.7%**	**9.7%**	**9.7%**
Large Regional Jet																
	ARJ	69	3,126	1,358	-	-	-	-	-	6.0%	3.3%	-	-	-	-	-
	CR7	70	-	3,148	3,180	3,515	3,809	4,127	4,149	-	7.7%	8.6%	9.3%	10.0%	10.8%	10.8%
	E70	70	-	2,240	3,990	4,296	4,655	5,044	5,071	-	5.5%	10.8%	11.3%	12.2%	13.2%	13.2%
			3,126	**6,746**	**7,170**	**7,811**	**8,464**	**9,171**	**9,220**	**6.0%**	**16.5%**	**19.4%**	**20.6%**	**22.2%**	**23.9%**	**24.0%**
Small Regional Jet																
	CRJ	49	3,466	13,818	9,654	9,790	9,809	9,882	10,054	6.7%	33.8%	26.2%	25.8%	25.8%	25.8%	26.1%
	ER3	37	936	2,090	1,930	1,852	1,723	1,603	1,630	1.8%	5.1%	5.2%	4.9%	4.5%	4.2%	4.2%
	ER4	50	-	16	28	-	-	-	-	-	0.0%	0.1%	-	-	-	-
	ERD	44	-	730	1,522	1,588	1,591	1,603	1,630	-	1.8%	4.1%	4.2%	4.2%	4.2%	4.2%
	ERJ	50	1,296	810	-	-	133	267	272	2.5%	2.0%	-	-	0.3%	0.7%	0.7%
			5,698	**17,464**	**13,134**	**13,230**	**13,255**	**13,355**	**13,587**	**11.0%**	**42.8%**	**35.6%**	**34.9%**	**34.8%**	**34.9%**	**35.3%**
Turboprop																
	BE1	19	12,122	6,918	4,524	4,119	3,679	3,282	3,054	23.4%	16.9%	12.3%	10.9%	9.7%	8.6%	7.9%
	CNA	9	-	946	480	434	409	386	382	-	2.3%	1.3%	1.1%	1.1%	1.0%	1.0%
	DH8	37	9,968	3,690	4,444	4,336	4,293	4,248	4,390	19.3%	9.0%	12.0%	11.4%	11.3%	11.1%	11.4%
	EM2	30	6	-	-	-	-	-	-	0.0%	-	-	-	-	-	-
	J31	18	2,328	-	-	-	-	-	-	4.5%	-	-	-	-	-	-
	J41	28	396	-	-	-	-	-	-	0.8%	-	-	-	-	-	-
	SF3	34	8,104	1,934	2,072	1,951	1,840	1,738	1,718	15.7%	4.7%	5.6%	5.1%	4.8%	4.5%	4.5%
	BEH	19	-	2,390	2,480	2,410	2,420	2,420	2,400	-	5.9%	6.7%	6.4%	6.4%	6.3%	6.2%
			32,924	**15,878**	**14,000**	**13,249**	**12,641**	**12,074**	**11,943**	**63.6%**	**38.9%**	**37.9%**	**34.9%**	**33.2%**	**31.5%**	**31.0%**
Total—All Aircraft			**51,774**	**40,826**	**36,898**	**37,940**	**38,060**	**38,320**	**38,470**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Sources: *Official Airline Guide;* Landrum & Brown, Inc.

Note: Data shown for 1995-2006 is based on OAG schedule data.

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VII.1.4 Summary of HPN Commercial Passenger Operations

Table VII-4 presents the forecast of operations for each of the primary components of passenger activity. Commercial passenger operations at HPN are forecast to increase by less than one percent per year, increasing from 38,312 operations in 2005 to 38,470 operations in 2025.

Table VII-4
HPN FORECAST OF TOTAL PASSENGER OPERATIONS

	Calendar Year	Domestic Passenger Air Carrier	Domestic Passenger Commuter	International Passenger	Total
Actual	1995	11,940	32,938	0	44,878
	2000	8,808	39,243	0	48,051
	2005	725	35,436	2,151	38,312
Estimate	2006	2,556	30,870	2,380	35,806
Forecast	2007	3,560	31,150	2,360	37,070
	2008	3,600	31,480	2,380	37,460
	2009	3,630	31,710	2,400	37,740
	2010	3,650	31,880	2,410	37,940
	2011	3,660	32,020	2,410	38,090
	2012	3,680	32,120	2,420	38,220
	2013	3,690	32,210	2,420	38,320
	2014	3,700	32,270	2,420	38,390
	2015	3,700	31,940	2,420	38,060
	2020	3,720	32,180	2,420	38,320
	2025	3,720	32,350	2,400	38,470
Average Annual Growth Rates					
	1995-2005	-24.4%	0.7%	n/a	n/a
	2005-2015	17.7%	-1.0%	1.2%	-0.1%
	2015-2025	0.1%	0.1%	-0.1%	0.1%
	2005-2025	8.5%	-0.5%	0.5%	0.0%

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Sources: *Official Airline Guide;* DOT, Schedule T-100; Landrum & Brown, Inc.

VII.2 ALL-CARGO OPERATIONS FORECAST

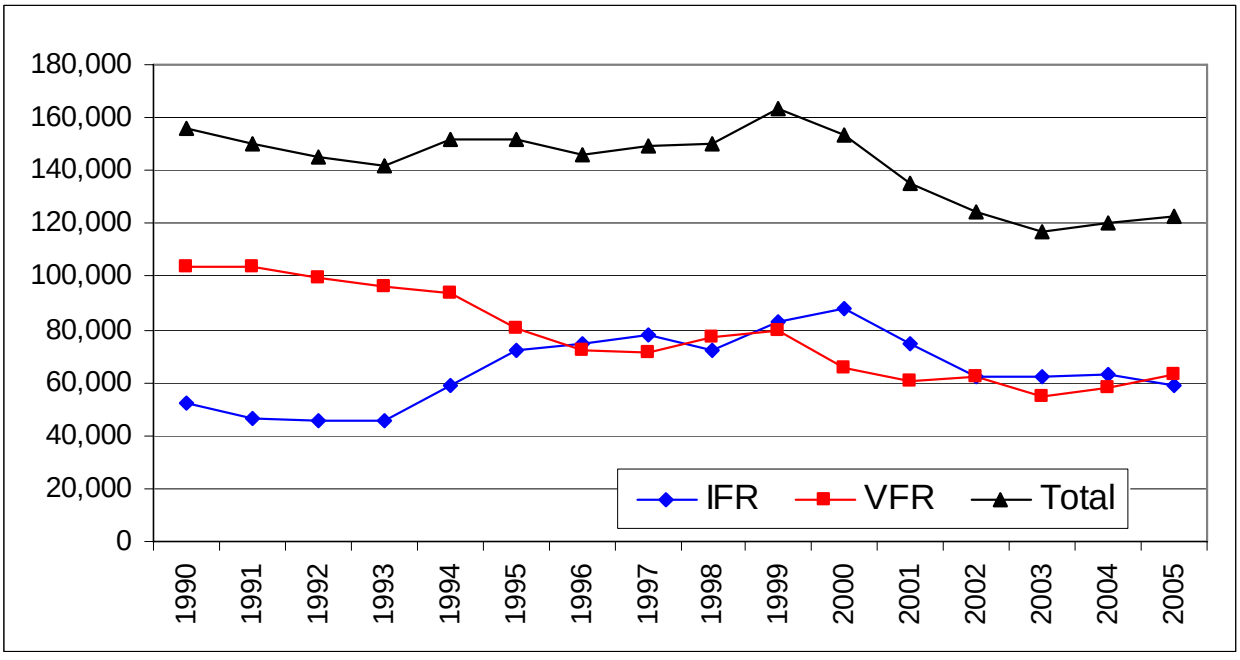
There has not been any significant all-cargo activity at the airport during the historical period except for occasional non-scheduled freighter service. Furthermore, there have been no indications of a new freighter airline starting service at the airport. Hence, no new cargo operations are forecast at the airport during the forecast period.

VII.3 GENERAL AVIATION OPERATIONS

This section summarizes the annual general aviation operations forecasts for HPN. 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 HPN. Thus, Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) approach operations were examined to build a basic profile of the general aviation fleet (see **Exhibit VII-1**). Generally large corporate and business jets make instrument (IFR) approaches to an airport. Smaller privately owned piston and turboprop aircraft more often conduct visual (VFR) approaches. Since 1995, IFR and VFR operations have been approximately equal at HPN. This suggests that general aviation operations are evenly split between large and small general aviation aircraft. It is expected that the future general aviation fleet will be similar to the current fleet at HPN.

Exhibit VII-1
HPN GENERAL AVIATION FLEET PROFILE



Sources: FAA ATCT counts and Landrum & Brown

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

HPN experienced a net decline in general aviation activity over the past decade, from 152,086 operations in 1995 to 122,457 operations in 2005. Fluctuations in general aviation activity over the 10-year period generally mirrored national trends in general aviation activity. Despite the downward trend at HPN, general aviation activity still accounted for 63 percent of total operations at HPN in 2005. FAA Air Traffic Activity System (ATADS) data through April 2006 indicates that general aviation operations are up three percent year-to-date. Over the forecast period, general aviation operations at HPN are forecast to average growth of 1.4 percent per year, reaching 163,000 operations by 2025. **Table VII-5** presents a summary of forecast general aviation operations for HPN.

Table VII-5
HPN FORECAST OF GENERAL AVIATION OPERATIONS

	Calendar Year	General Aviation
Actual	1995	152,086
	2000	153,573
	2005	122,457
Estimate	2006	127,355
Forecast	2007	129,020
	2008	130,710
	2009	132,420
	2010	134,150
	2011	135,900
	2012	137,680
	2013	139,480
	2014	141,300
	2015	143,150
	2020	152,760
	2025	163,000
Average Annual Growth Rates		
	1995-2005	-2.1%
	2005-2015	1.6%
	2015-2025	1.3%
	2005-2025	1.4%

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Sources: FAA ATCT counts and Landrum & Brown analysis

VII.4 NON-COMMERCIAL AIR TAXI OPERATIONS

This section summarizes the annual non-commercial air taxi operations forecasts for HPN. 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) and large corporate aircraft. Non-commercial air taxi operations at HPN have increased by 27.4 percent annually over the previous 10 years, from 2,858 in 1995 to 32,286 in 2005. While

the increase in non-commercial air taxi operations has been significant over the past ten years, the rate of growth in these operations has slowed in recent years. From 2002 to 2005, non-commercial air taxi operations increased by an average annual rate of 2.8 percent.

Air taxi operations were projected to continue to grow at this rate through 2010 before slowing to the FAA forecasted national growth rate of 2.0 percent for the balance of the forecast period. Therefore, this forecast projects non-commercial air taxi operations will increase at an average annual rate of 2.2 percent from 2005 to 2025 to 49,960 annual operations in 2025. **Table VII-6** shows the resulting non-commercial air taxi operations forecast.

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

	Calendar Year	Air Taxi Operations
Actual	1995	2,858
	2000	14,797
	2001	22,583
	2002	29,694
	2003	29,298
	2004	31,552
	2005	32,286
Estimate	2006	33,199
Forecast	2007	34,140
	2008	35,110
	2009	36,100
	2010	37,120
	2011	37,860
	2012	38,620
	2013	39,390
	2014	40,180
	2015	40,980
	2020	45,250
	2025	49,960
Average Annual Growth Rates		
	1995-2005	27.4%
	2002-2005	2.8%
	2005-2010	2.8%
	2010-2015	2.0%
	2015-2025	2.0%
	2005-2025	2.2%

H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\HPN\[HPN Template v2.xls]Graphs

Sources: FAA ATCT counts and Landrum & Brown analysis

VII.5 MILITARY OPERATIONS

This section summarizes the annual military operations forecasts at HPN. Historically, military activity has been negligible at HPN with a maximum of 661 military operations reported in any year over the past decade (see **Table VII-7**). There are no factors that should increase the military presence at HPN over the forecast period. Consequently, 100 annual military operations are forecast annually over the next twenty years, which is in line with military volumes for four of the past five years at HPN.

Table VII-7
HPN FORECAST OF MILITARY OPERATIONS

	Calendar Year	Military Operations
Actual	1995	370
	2000	661
	2005	331
Estimate	2006	100
Forecast	2007	100
	2008	100
	2009	100
	2010	100
	2011	100
	2012	100
	2013	100
	2014	100
	2015	100
	2020	100
	2025	100
Average Annual Growth Rates		
	1995-2005	-1.1%
	2005-2015	-11.3%
	2015-2025	0.0%
	2005-2025	-5.8%

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Sources: FAA ATCT counts and Landrum & Brown analysis

VII.6 TOTAL AIRCRAFT OPERATIONS

Table VII-8 summarizes the total operations forecasts for HPN. Historical operation totals were taken from the online FAA ATADS database. Total operations at the airport are expected to grow at an average of 1.3 percent annually from 2005 to 2025.

Table VII-8
HPN FORECAST OF TOTAL OPERATIONS

	Calendar	Domestic Passenger		International		Non-Comm	General		
	Year	Air Carrier	Commuter	Passenger	All-Cargo	Air Taxi	Aviation	Military	Total
Actual	1995	11,940	32,938	0	0	2,858	152,086	370	200,192
	2000	8,808	39,243	0	0	14,797	153,573	661	217,082
	2005	725	35,436	2,151	520	32,286	122,457	331	193,906
Estimate	2006	2,556	30,870	2,380	40	33,199	127,355	100	196,500
Forecast	2007	3,560	31,150	2,360	0	34,140	129,020	100	200,330
	2008	3,600	31,480	2,380	0	35,110	130,710	100	203,380
	2009	3,630	31,710	2,400	0	36,100	132,420	100	206,360
	2010	3,650	31,880	2,410	0	37,120	134,150	100	209,310
	2011	3,660	32,020	2,410	0	37,860	135,900	100	211,950
	2012	3,680	32,120	2,420	0	38,620	137,680	100	214,620
	2013	3,690	32,210	2,420	0	39,390	139,480	100	217,290
	2014	3,700	32,270	2,420	0	40,180	141,300	100	219,970
	2015	3,700	31,940	2,420	0	40,980	143,150	100	222,290
	2020	3,720	32,180	2,420	0	45,250	152,760	100	236,430
	2025	3,720	32,350	2,400	0	49,960	163,000	100	251,530
Average Annual Growth Rates									
	1995-2005	-24.4%	0.7%	n/a	n/a	27.4%	-2.1%	-1.1%	-0.3%
	2005-2015	17.7%	-1.0%	1.2%	n/a	2.4%	1.6%	-11.3%	1.4%
	2015-2025	0.1%	0.1%	-0.1%	n/a	2.0%	1.3%	0.0%	1.2%
	2005-2025	8.5%	-0.5%	0.5%	n/a	2.2%	1.4%	-5.8%	1.3%

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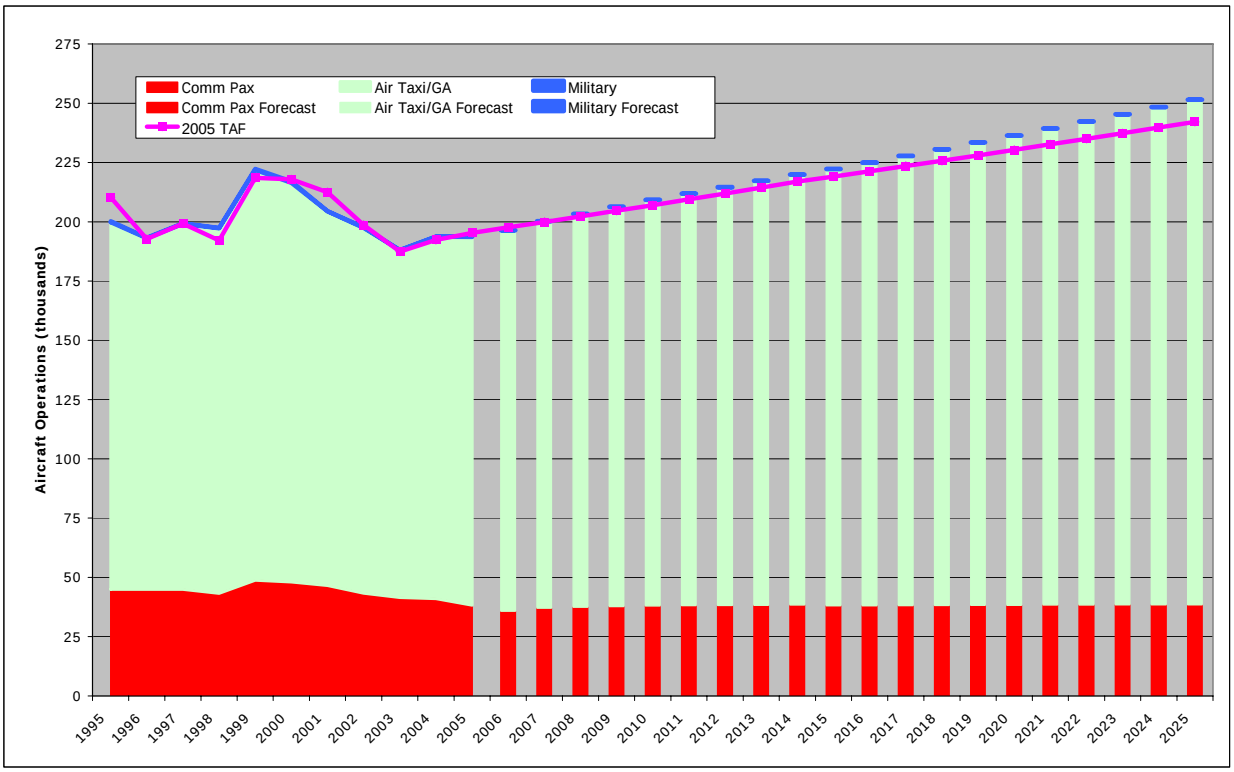
Sources: FAA ATCT counts and Landrum & Brown analysis

Exhibit VII-2 summarizes the HPN operations forecast by segment. The graph also depicts the expected forecast compared to the FAA TAF. The forecast is slightly higher than the TAF but never deviates by more than four percent in a given year.

Exhibit VII-2
HPN AIRCRAFT OPERATIONS FORECAST VS. FAA TAF



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Sources: FAA ATCT counts, FAA 2005 TAF and Landrum & Brown analysis.

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. Due to air service restrictions, an optimistic scenario was not developed for HPN. The pessimistic operation forecast was derived from the underlying enplanement forecasts based on lower economic growth for the catchment area. **Table VII-9** summarizes total operations for the low scenario.

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

	Calendar Year	Base Case	Optimistic	Pessimistic
Actual	1995	200,192		
	2000	217,082		
Estimate	2005	193,906	n/a	193,906
Estimate	2006	196,500	n/a	193,400
Forecast	2007	200,330	n/a	195,170
	2008	203,380	n/a	198,220
	2009	206,360	n/a	201,210
	2010	209,310	n/a	204,180
	2011	211,950	n/a	206,820
	2012	214,620	n/a	209,490
	2013	217,290	n/a	212,160
	2014	219,970	n/a	214,850
	2015	222,290	n/a	217,240
	2020	236,430	n/a	231,390
	2025	251,530	n/a	246,480
Average Annual Growth Rates				
	1995-2005	-0.3%		
	2005-2015	1.4%		1.1%
	2015-2025	1.2%		1.3%
	2005-2025	1.3%		1.2%

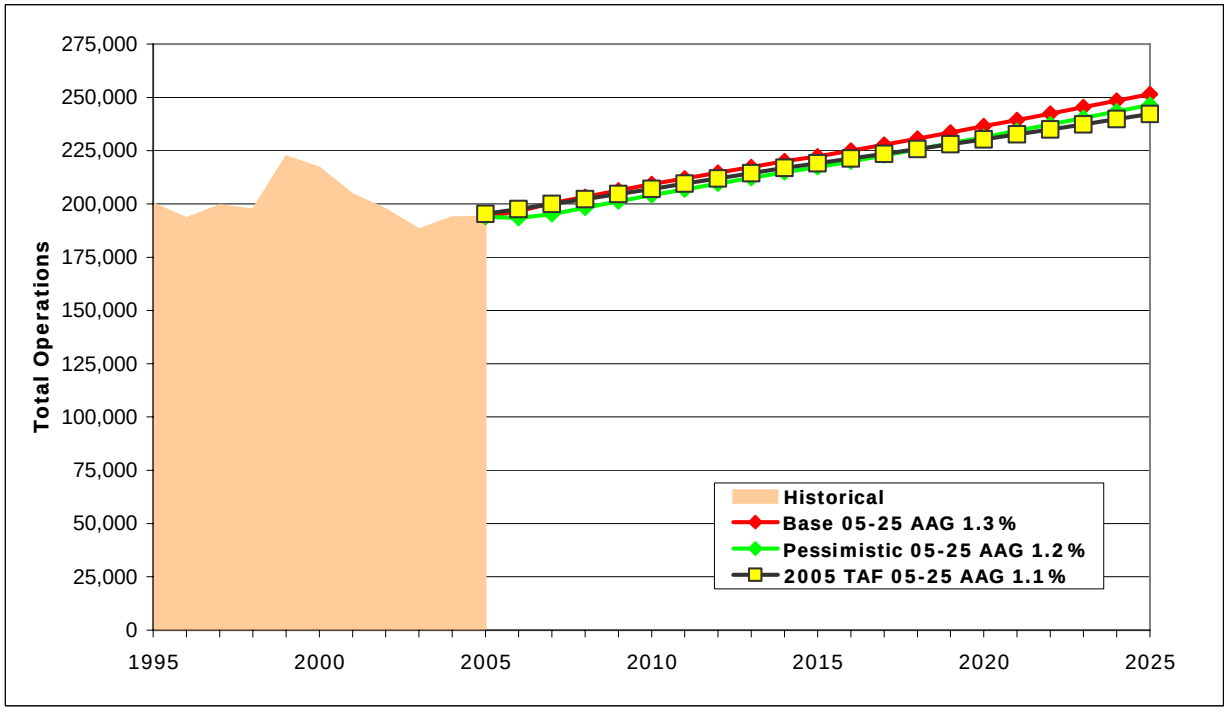
H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\HPN\[HPN Template v2.xls]Ops Scenarios

Source: Landrum & Brown, Inc.

VII.8 COMPARISON OF FORECAST RANGE TO FAA 2005 TAF

Exhibit VII-3 allows comparison of the base and pessimistic operations forecasts to the FAA TAF forecast for HPN. The base and pessimistic forecasts are both slightly higher than the TAF.

Exhibit VII-3
BASE AND PESSIMISTIC OPERATIONS FORECASTS VS. FAA 2005 TAF



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Sources: FAA 2005TAF; Landrum & Brown analysis

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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 HPN were converted into peak month, average weekday, 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, accounting for an average of 9.7 percent of annual enplanements, over the past three years. The air carrier and commuter peak month factors averaged 10.6 percent and 9.5 percent, respectively, of annual enplanements, over the same period. It was assumed that the monthly seasonality patterns at HPN would not change materially over the forecast period.

The peak month enplanement forecasts were converted into average weekday (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 1,526 enplanements in 2005 to 2,130 enplanements by 2025; representing average annual growth of 1.7 percent. Peak hour enplanements, which were estimated to be 185 for the 2005 baseline design day, are projected to increase to 266 enplanements by 2025.

Table VIII-1
HPN DERIVATIVE FORECASTS—PASSENGER ENPLANEMENTS

Annual				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	19,724	446,704	466,428
Forecast	2010	154,300	465,000	619,300
	2015	157,850	479,250	637,100
	2020	159,800	488,800	648,600
	2025	161,040	496,260	657,300

Peak Month				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	1,515	40,965	42,480
Forecast	2010	13,116	42,643	55,758
	2015	13,417	43,950	57,367
	2020	13,583	44,825	58,408
	2025	13,688	45,510	59,198

Peak Month Average Weekday				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	76	1,450	1,526
Forecast	2010	437	1,565	2,002
	2015	447	1,613	2,060
	2020	452	1,645	2,097
	2025	456	1,670	2,126

Peak Hour				
	Calendar Year	Air Carrier Enplanements	Commuter Enplanements	Commercial Passenger Enplanements
Base	2005	76	183	185
Forecast	2010	87	172	250
	2015	89	177	257
	2020	90	181	262
	2025	91	184	266

Source: Landrum & Brown analysis
Filepath: H:\New York System Forecast\Forecasts\Enpax & Ops\Regional Airports\HPN\[HPN Template v2.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 at HPN 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
HPN DERIVATIVE FORECASTS—PASSENGER AIRCRAFT OPERATIONS

Annual				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	725	37,587	38,312
Forecast	2010	3,650	34,290	37,940
	2015	3,700	34,360	38,060
	2020	3,720	34,600	38,320
	2025	3,720	34,750	38,470

Peak Month				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	40	3,230	3,270
Forecast	2010	310	2,990	3,300
	2015	315	2,996	3,311
	2020	316	3,017	3,333
	2025	316	3,030	3,346

Peak Month Average Weekday				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	2	118	120
Forecast	2010	10	115	125
	2015	10	116	126
	2020	10	116	126
	2025	10	117	127

Peak Hour				
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Base	2005	1	11	11
Forecast	2010	2	11	11
	2015	2	11	11
	2020	2	11	11
	2025	2	11	11

Source: Landrum & Brown analysis
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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 HPN were converted into peak month average day (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. The peak month enplanement forecasts were converted into average weekday (PMAWD) equivalents using OAG departing seat data as a proxy for enplanements.

At HPN Airport, August was identified as the peak month, accounting for an average of 9.7 percent of annual enplanements, over the past three years. The air carrier and commuter peak month factors averaged 10.6 percent and 9.5 percent, respectively, of annual enplanements, over the same period. It was assumed that the monthly seasonality patterns at HPN would not change materially over the forecast period.

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

At HPN Airport, PMAWD enplaned passengers are projected to grow from 1,526 in 2005 to 2,060 in 2015, an average annual increase of 3.0 percent. **Table IX.1** presents the PMAWD enplanement activity forecasts for 2015 for HPN.

Table IX.1
HPN FORECASTS—2015 PASSENGER ENPLANEMENTS

	Calendar Year	Annual Enplanements	PMAWD
Actual	1990	356,503	1,166
	1995	469,900	1,537
	2000	517,359	1,693
Estimated	2005	466,428	1,526
	2006	546,956	1,769
Forecast	2007	599,600	1,939
	2008	607,700	1,965
	2009	614,100	1,986
	2010	619,300	2,002
	2011	623,800	2,016
	2012	627,700	2,029
	2013	631,200	2,040
	2014	634,300	2,051
	2015	637,100	2,060
Average Annual Growth Rates:			
	1990-2005	1.8%	1.8%
	2005-2015	3.2%	3.0%

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

IX.2 Aircraft Operations

Peak month operations factors for HPN 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 HPN are presented in **Table IX.2**.

Table IX.2
HPN PMAWD FORECASTS—AIRCRAFT OPERATIONS

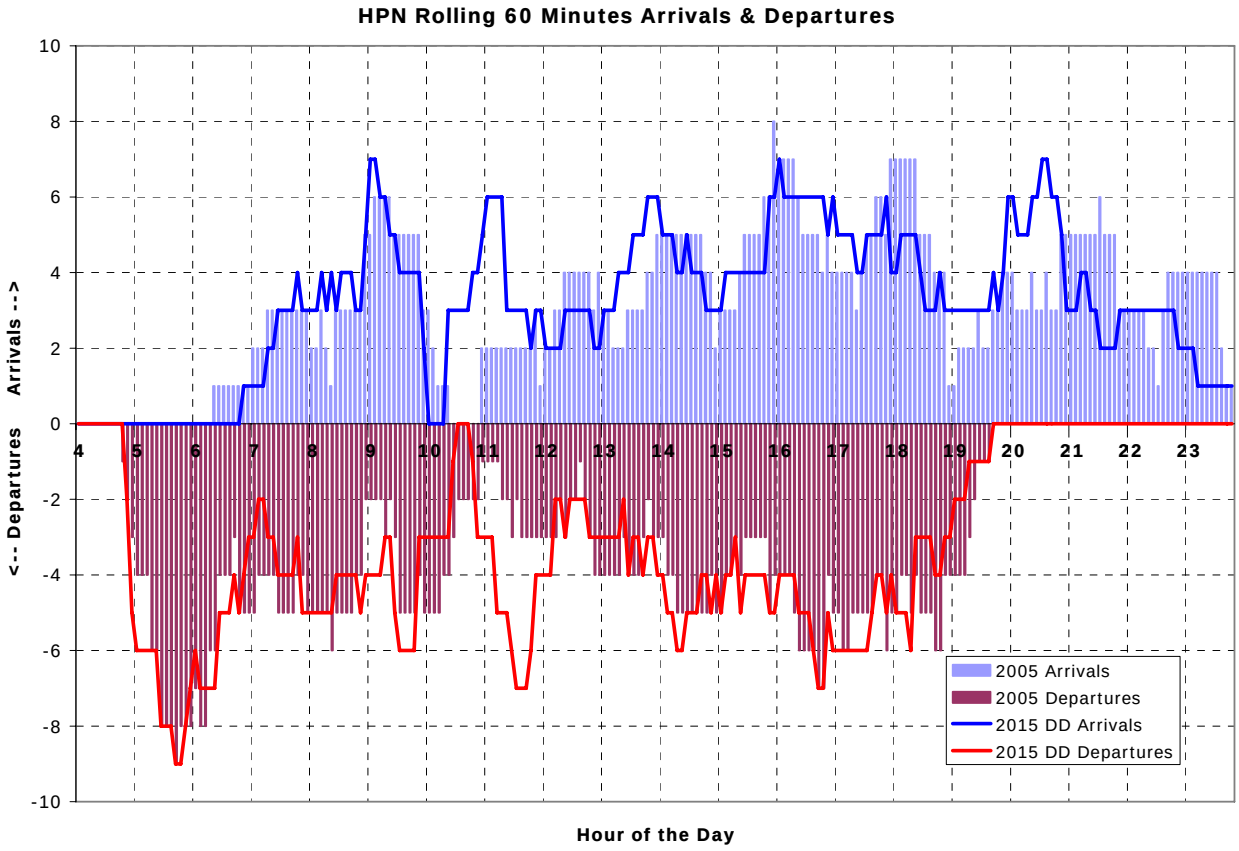
	Calendar Year	Air Carrier Operations	Commuter Operations	Commercial Passenger Operations
Actual	1990	14	139	153
	1995	33	103	136
	2000	24	123	147
Estimated	2005	2	118	120
	2006	7	112	119
Forecast	2007	10	112	122
	2008	10	114	124
	2009	10	115	125
	2010	10	115	125
	2011	10	116	126
	2012	10	116	126
	2013	10	116	126
	2014	10	116	126
	2015	10	116	126
Average Annual Growth Rates				
	1990-2005	-12.2%	-1.1%	-1.6%
	2005-2015	17.7%	-0.2%	0.5%

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

At HPN, PMAWD operations are projected to grow from 120 in 2005 to 126 in 2015, an average annual increase of 0.5 percent.

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 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
HPN DESIGN DAY AIRCRAFT OPERATIONS



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