



New Castle Airport (ILG) Business Plan 2008-2012



**Version 10.2
November 2007**

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TECHNICAL REPORT

New Castle Airport Business Plan

1. EXECUTIVE SUMMARY

A number of recommendations have been made as a part of this business plan study, all with the goal of improving the financial and operational performance of New Castle Airport (ILG). In addition, this study is aimed at increasing economic development and employment in the area, and ensuring that the airport fulfills its public service role to the state and the region. It is recognized that there are some initiatives, though desirable, are outside the immediate control of DRBA or airport management. As such, the Authority should focus its efforts on those initiatives which have immediate value, but also help to position the airport for its longer term objectives.

The recommended plan of action from this report rests on several basic strategic initiatives not listed in order of importance:

Prepare for the expected rise in demand for scheduled air service:

The effort associated with the attraction and sustainability of air service to Delaware represents a significant economic opportunity for the state as a whole. The development of a quality air service program at New Castle Airport will be Delaware's best opportunity to be a serious player in an increasingly competitive regional economy where investors view scheduled air service as a critical business tool. Thus, it is recommended that DRBA, New Castle County and the State of Delaware partner in an effort to define and outline the early multi-jurisdictional development steps necessary to plan and build a sustainable program by improved use of New Castle Airport.

There are many transportation, investment, and accessibility related reasons to pursue air service due to the obvious benefits that a successful program brings. However, it is also important to identify and measure that which is *lost* to the state each time Delawareans make a choice to use an out-of-state airport for their travel needs. In most cases, Delaware loses both direct spending by consumers as well as its share of matching federal capital dollars based on passenger activity, largely to the border states of Pennsylvania and Maryland. For example, in less than one full year of air service by Delta Air Lines partner Atlantic Southeast Airlines (ASA) during 2007, New Castle Airport earned a net federal entitlement grant of \$850,000 above what it would have earned had there been no scheduled air service. This was achieved by the airport "enplaning" at least 10,000 revenue passengers and becoming a *primary commercial service* airport as defined in FAA criteria. The actual entitlement award level, which begins at \$1,000,000 annually, increases proportionately as the actual number of revenue passengers processed rises.

The FAA also offers another mechanism for commercial airports to self-fund their growing capital improvement programs which support air service. In 1990, the federal

government introduced the Passenger Facility Charge (PFC) program which would authorize DRBA to impose and collect a federally approved ticket fee of up to \$7.00 per ticket. These activity driven fees would be collected by the airline(s) operating at ILG as part of the ticketing process and deposited into a special account. Once collected, these revenues can be used in a variety of ways by an airport in support of its on-going capital development needs.

The regional environment for scheduled air service is extremely competitive where consumers have the ability to choose from among many airlines and airports. For years, consumers have also developed travel and brand loyalty habits that serve to sustain the competitive advantage of the major airports at Philadelphia (PHL) and Baltimore (BWI). For New Castle Airport to have a share of this existing and future regional air service demand, the DRBA must lead a statewide partnership effort aimed at positioning the airport as part of the solution to the growing capacity crunch at the major airports.

If desired, part of this initiative involves the utilization of federal programs designed to help stimulate passenger demand and consumer recognition of the availability of air service in Delaware. As part of this strategic effort, it is recommended that DRBA apply for a federal grant under the small community air service program (SCASD) in 2008. A first phase matching grant request could begin at \$250,000 or more. The initial grant should be used to develop an extensive market study and airline-specific pro-forma analysis for target airlines interested in serving the New Castle market.

The development of an air service program at New Castle (ILG) is projected to serve more than 290,900 regional air travelers each year. An added benefit to DRBA is that revenues from airline operations at ILG could significantly improve the current airport revenue picture within five years. The airport could experience new sources of revenue from auto parking, concessions, and user fees.

Attract additional corporate aircraft tenants

In the past two years, DRBA has significantly improved its holdings with respect to based jet aircraft tenants in DRBA-owned hangar facilities. As of this writing, DRBA was nearing completion of a deal to acquire the former MBNA hangar and parcel at (mention the acquisition of MBNA and Hercules Cost/Date/Expected Occupancy) With the exception of the Hercules hangar facility, all DRBA hangars are now partially or entirely occupied by a single or multiple tenants. In addition to the existing airport-owned hangars, DRBA should take advantage of any opportunities which arise to add capacity in order to attract a fractional or other multiple aircraft owner such as Netjets. The DRBA should pursue aircraft operators seeking a more cost-effective way of hangaring and operating their fleets for which New Castle is an ideal location. DRBA should also highlight the advantages of the airport's superb location, lack of flight delays, and competitive cost structure of its facilities.

Clientele Diversification – FBO Development

For a number of years, DRBA management has focused its efforts on services and facilities associated with the based or tenant corporate aviation market as the primary source of revenue for the airport. One downside to this approach is the possible negative impact to the airport's revenue base which could result from a sluggish corporate aviation market. In this regard, the loss of 3 or 4 hangar tenants can impact the overall revenues at the airport in rental, fuel flow and landing fee income. Thus, it is recommended that DRBA management target and pursues a more balanced, diversified client base, particularly in New Castle Airport's ability to attract a greater share of the transient (itinerant) aircraft market.

However, New Castle's ability to attract a sizable share of this market will be partially dependent on the quality of its retail FBO service(s). It is recommended that DRBA begin discussions with the existing on-airport FBO companies to determine their; (1) outlook on the current and future transient aircraft business and our ability to improve our capture rate, and (2) interest in additional capital investment on their leasehold or another suitable location at New Castle Airport.

Each FBO should also be asked to define the manner and methodology in which they could participate in the overall marketing and promotion of the airport to an expanded customer base.

Develop vacant aviation and non-aviation parcels

Given the positive reports associated with both the regional office and industrial real estate markets on New Castle County, DRBA should aggressively pursue leasing opportunities in line with these trends.

According to the third quarter 2007 report of CB Richard Ellis, New Castle County has shown positive absorption rates for the first time in the last 12 months. They state that: "decreasing vacancy rates are causing a need for increased construction, which is helping to drive development in both the Wilmington and Newark CBD's". New Castle County had a vacancy rate of 15.79% in office space and a 9.15% rate in industrial space. The average Class A leasing rate was \$22.37 and for industrial the average minimum asking rent was \$3.55 (the lowest in the region). It is interesting to note also that New Castle County showed positive absorption rates of over 200,000 square feet in both sectors respectively, although vacancy rates were among the highest in the region.

New Castle Airport has approximately 3 acres of undeveloped non-aviation land available for lease or sale. In the past, there has been relatively weak demand for the airport's DEMA building at 12 Penns Way in the corporate commons area. It is currently leased and under the control of the NCC Chamber of Commerce. DRBA has sought to lease or sell the 13 acre property surrounding the building whose value was appraised at \$5 million for industrial or office use. DRBA actually owns this parcel in fee simple, and as such proceeds from this sale would not be counted as airport revenue.

In addition, the main DRBA parcel with frontage along Route 13 at 2.07 acres should be offered to Flight Safety International as an enhancement to its existing business, which should have the added benefit of both retaining and growing high paying jobs. A sale of this parcel would yield \$1.3 million to the airport and under lease the airport would realize \$130,000 annually in rental payments. Finally, the airport owns another small parcel commonly referred to as the “Getty site” at 0.66 acres which could be leased for approximately \$56,000 per year.

On the aviation-use side, the airport owns a non-contiguous, (i.e., outside the existing fence) undeveloped 38 acre parcel which was acquired by the County in the 1980’s as part of an FAA grant. The acquisition came with the stipulation that the land should be developed for use within 10 years. Under DRBA management and control, the airport was granted an extension of an additional 10 years, now expired, to define an intended aviation use for the property. Prior to the preparation of the airport’s current draft Master Plan and associated ALP, the FAA and DRBA had discussed that the parcel could be: (1) used to develop a long-term auto parking area or support facilities in relation to the airport’s then air service program with Shuttle America and/or, (2) that due to the parcel’s non-contiguous location and access from New Churchmans Road, FAA would entertain a request to convert some of the land to non-aviation use in order to generate some revenue for the airport. To date, DRBA has made no such request.

Most recently, the 38 acre parcel has been identified as a site for the development or relocation of the airport’s T-Hangars and Condo Hangars. In addition, the draft ALP defines part of its use as ancillary facilities (rental cars, access road, auto parking, etc) in support of a passenger terminal building and apron developed to accommodate he expected growth of scheduled air service in Delaware.

Specific recommendations by timeframe are as follows:

Immediate

1. Apply for a Small Community Air Service Development Grant in 2008.
2. More aggressive marketing of airport to corporate aircraft operators most likely to make a location change to New Castle, i.e. those at Teterboro, Morristown, and the two City of Philadelphia operated Airports.
3. Implement the re-branding process for New Castle Airport to reflect its regional service impact and true passenger catchment area; highlight the fact that the inherent benefits of this effort have cross value for both DRBA’s corporate and commercial aviation sectors.
4. Improve and upgrade the New Castle Airport website and marketing materials in line with # 3 above.
5. Complete the New Castle Airport Master Plan and present its findings to the general public and DE and NJ elected officials; along with the plan’s conformance within the NCC Recorded Development Plan.
6. Prepare an application for authorization to impose a PFC fee at ILG at either the \$4.50 or \$7.00 (if authorized) per ticket level in support of a future capital

- development program.
7. Perform a more extensive examination of the airport's existing terminal site's capacity to realistically measure and determine its suitability beyond the accommodation of 90,000 annual enplaned passengers.
 8. Begin discussions with each existing FBO company to identify their level of interest in expansion as part of the overall effort to attract a greater share of regional transient aircraft operations

Medium term

1. Begin the Phase II interim development of the existing terminal facility to address space allocation needs for: baggage handling, airline ticket counter, rental cars, TSA checked baggage screening, queuing areas, concessions, and overall accessibility issues.
2. Complete and implement any landside improvements with respect to circulation, rental car parking, rental car return, handicap access, and overflow parking.
3. Develop an analysis of the potential for New Castle to accommodate air cargo service beyond the ad hoc arrival of single aircraft or those aircraft needing parking space on a short-term basis.

1.1 Summary Timetable and Trigger Points

Table 1 presents a timetable and listing of trigger points for implementation of the recommended plan.

Table 1 - Recommended Plan		
Action	Description	Date
Future Airline Service	Reservation of property at or near the airport for a new terminal building, access and auto parking area.	immediate
Step 1	Begin discussions with DeIDOT and New Castle County to explore access to the airport's 38 acre aviation parcel, including the possible truncating of Old Churchman's Road	4/2008
Step 2	Continue discussions with any and all airlines that have an interest in ILG. This would include all low cost carriers not currently in the PHL market. Development of an associated airline-related marketing and branding program.	1/2008
Step 3	Apply for a Small Community Air Service Development Grants - One for a feasibility study and another for marketing and/or startup subsidy.	4/2008
Future Air Cargo Service	If a day-time air cargo carrier can be found that desires to use ILG, we will work with that carrier to develop landside facilities and ramp.	When needed
Step 1	If night-time air cargo carrier service is a significant portion of the air cargo operation, DRBA must decide what public relations price can be paid in return for the landing and rental fees from the carrier.	When needed

Attract a greater share of transient aircraft activity	Begin discussions with each existing FBO to determine their level of interest in expansion and cooperative marketing to enhance the potential draw of ILG to transient aircraft.	Immediate
Step 1	Ensure that there is/are an available location(s) on the airport for any related FBO expansion.	2/2008
Step 2	If no existing FBO is forthcoming, develop a specific RFP that invites a new entrant, high-quality FBO to ILG. Distribute this RFP to a select list of nationally-known FBOs.	5/2008
Hangar Development & Marketing	DRBA should continue efforts to attract corporate aviation customers through an enhanced marketing program.	Immediate
Perform more specific analysis	Financing of hangar facilities could either be with DRBA money or through private sources of funding.	Unknown
Perform more specific analysis	For DRBA financing, FAA grants for the public portions of such projects are preferred.	Unknown
	For private financing, DRBA should issue RFPs to determine if there is a market for such activity. Often, the success of private financing is based upon the negotiated terms of the agreement between the sponsor and the private developer.	When Needed
Property Development	DRBA should aggressively pursue sale or lease of the 13 acre parcel in corporate commons.	Immediate – generic use can be identified
	Formally offer the Rt. 13, 2.07 acre parcel to Flight Safety for additional employee and customer parking as an enhancement to its existing business. This project also has benefits in improving the overall capacity of auto parking in the existing terminal area.	Immediate
Perform analysis of market conditions	Studies and/or contracts with commercial real estate brokers are needed to determine the market value of non-aeronautical airport property and the best methods of development.	Immediate

2. STATEMENT AND PURPOSE

2.1 Introduction

The Delaware River and Bay Authority (DRBA) operates a portfolio of five airports through long-term lease arrangements with either a State or local government in Delaware and New Jersey. These airports play an important role in the community by providing transportation services and access that support and enhance the economic vitality of the region served by the airport. During the 2007 strategic planning process, the Delaware River & Bay Authority's leadership identified several goals for the Airport Department. One of those primary goals was to develop business plans for each of the five airport facilities that we operate by the end of 2007. In turn, once completed, marketing plans would then be developed.

According to the 2006 Airports Division results, The DRBA Airports earned a net operating profit of \$109,111. This also includes an administrative overhead expense of \$910,315. New Castle Airport assumes the bulk of the administrative costs associated with the Airports Division at 82.4% of this amount.

Upon closer examination, only the New Castle Airport posted a net operating profit of \$932,871. Each of the remaining four DRBA airport facilities posted a combined loss of \$823,757. The purpose of this business plan is to provide recommendations to strengthen the role of the New Castle Airport and its economic contribution to the local community while maintaining the overall financial viability of DRBA's airport portfolio.

The development of a business plan for New Castle Airport is intended to be used as a tool or guide for those key individuals in the decision-making process who will drive or recommend both policy and investment strategies. Enhancing airport performance on many levels is a goal, but it is recognized that each component such as operations, planning, capital improvement, and business strategy must all work in tandem for success.

New Castle Airport is a relatively mature facility whose balance and variety of aviation activity has yielded significant benefits for its owner/operator. Over the past 15 years, key decision have been advanced to further enhance/improve the airport's infrastructure, allow for limited third-party airside investment, and define the owner's role in both design-build concepts as well as build-to-suit. These strategies, both inside and outside the fence, have yielded benefits which have accrued to the airport's bottom line and clearly positioned the owner/operator with an opportunity to refine its strategy for the next 10-15 year cycle.

No examination of New Castle Airport's potential would be appropriate without a clear recognition of the bodies of work which have preceded this current effort. In this regard, we have reviewed and analyzed the findings and conclusions reached in several of these studies, which are essentially on the public record. These studies, of varying scope, size and complexity, have been developed with a view toward defining the airport's role in the community, its current capture rate of aviation and non-aviation business opportunities, strategies for enhancing airport performance, and a plan for future capital investments.

These studies, as examined and used as a guide for this more specific analysis are:

- The New Castle Airport Master Plan Update (DRBA, September 2006)
- The New Castle Airport Business Plan (DelDot and DRBA, December 2005)
- The Delaware Aviation System Plan Update – Phase I (DelDot, May 2006)
- The 2006 Regional Aviation System Plan (FAA, December 2006)
- The Delaware Aviation System Plan Update - Phase II (DelDot, June 2007)
- FAA Regional Air Service Demand Study – Study Overview (FAA & PANYNJ, December 2006)
- DVRPC Annual Report 2006 (DVRPC, December 2006)
- PENJERDEL Strategic Plan (December 2006)

While each of the foregoing studies and plans have had differing approaches, objectives, and were performed by various stakeholders, all similarly concluded several key facts about New Castle Airport's future:

- The Delaware Valley Airport System is short on capacity and New Castle Airport is seen as a critical fixture in the region's transportation network.
- New Castle's role within the State of Delaware is critical to the state's competitive business foothold and corporate aviation access to key domestic and international business markets.
- New Castle's economic impact on the region is measured at over 2400 jobs and \$272 million in total impact
- New Castle Airport's central location will continue to be a benefit for the non-aviation corporate, commercial development, and real estate interests seeking visibility and value
- New Castle Airport's airside infrastructure should continue to be enhanced through participation in the FAA's AIP Program for both safety and security.
- New Castle's owner/operator should pursue a re-branding, marketing, and improvement strategy that positions the airport to attract a low-fare airline and support the airport's role as a regional commercial airport.

2.2 Report Outline

There are a variety of ways in which an airport's impact and business can be discussed or evaluated by stakeholders. Depending on the level of effort, such an analysis can be defined via a master planning process, a graphic and narrative economic impact assessment, or within the scope of a larger airport system plan.

In this plan, we will first provide the reader with an abbreviated but thorough background and history on New Castle Airport followed by a facilities overview including discussion of the airport's role.

Any discussion of public-use, federally eligible and funded airports centers on the FAA-mandated and approved Airport Layout Plan (ALP). We will discuss the critical connection between an airport ALP and how it defines the airport's existing, short, and long term growth

and capacity. Another critical element in the definition of New Castle's future is that which has been incorporated in the New Castle County Major Record Plan or Recorded Development Plan. We will discuss the impact of this plan on the potential expansion of the airport. Closing this section, we will present a summary overview of all capital improvements made at the airport during the period 2001-2007.

Next, we will define the airport's existing physical capabilities and characteristics, which naturally play a key role in the airport's competitive framework. We will then outline the future plan(s) for improvements to the airport's infrastructure over the 20 year horizon, as well as develop a summary of New Castle's role within the competitive aviation market environment. This section will conclude with an historical look at the airport's financial picture and a discussion of an earlier economic impact assessment and analysis performed in 2004.

Finally, we will present two business cases that outline potential growth scenarios. These scenarios will closely align with the recently developed aviation forecasts and their specific connection to airport facility needs and investment(s). The recommended plan and implementation strategy will attempt to tie all the pieces together in recommending a path forward for the airport. This recommended strategy will become the cornerstone for the Airport Division's 2008 goals and objectives, the development of a comprehensive marketing plan, and identification of other internal needs such as a further investment or study of air service potential or additional corporate hangar development.

In summary, this plan's purpose is to (1) examine the airport's existing financial performance within the current realities and business model, (2) examine and recommend options for future business and investment strategies, and (3) define other enhancements which are best suited to matching the varied goals of improved financial performance within the larger regional public transportation agenda in which New Castle Airport plays a key role.

3. BACKGROUND

3.1 Ownership

The Airport was built as a military training facility prior to World War II. It continued in this capacity throughout the war years with gradual joint/civilian use beginning in the early 1950s. Subsequently, military activity decreased while the civil aviation needs of Wilmington and New Castle County continued to expand. Eventually, the airport was declared surplus to the needs of the Department of Defense and control was relinquished to New Castle County. With this change, the Airport was renamed the Greater Wilmington Airport and re-classified as a civil facility even though two military units continue to be based at the airport.

Under county control, the airport expanded with construction of a terminal building and auto parking, airfield improvements, hangar developments, and numerous other general aviation support facilities. Commercial airline service was available for many years, while the general aviation facilities grew to include one of the largest fixed base operators on the east coast. Today, the Airport remains the only public use civilian airport in the state of Delaware with an operational air traffic control tower and precision instrument landing aids. In 1986, the airport

was renamed the Greater Wilmington/New Castle County Airport to better reflect the true service area of the facility.

In 1994, New Castle County government decided it did not have the resources necessary to take the airport into the next century. In July of 1995, the Delaware River and Bay Authority (DRBA), owner and operator of the Delaware Memorial Bridge and the Cape May-Lewes Ferry, assumed management and operation of the airport through the auspices of a long term lease from New Castle County.

3.2 Facilities Overview

Airport Setting

New Castle Airport is located in northern New Castle County, Delaware. The 1,250-acre airport site lies within county jurisdiction, five miles south of the City of Wilmington, two miles west of the City of New Castle, and six miles east of Newark, Delaware. As shown in Figure 1-1, the Airport is situated at the convergence of Interstate Highways 95, 295, and 495; and is approximately five miles west of the Delaware Memorial Bridge. The Airport's terminal entrance is on Route 13 (DuPont Highway), the primary commercial and transportation corridor between Wilmington and Dover.

According to the Delaware Valley Regional Planning Commission's (DVRPC) airport system report for 2025, New Castle Airport is one of only three airports designated as commercial service in the Greater Philadelphia planning region.

Airport Role

The service level for New Castle has been established and defined by the National Plan of Integrated Airport Systems (NPIAS), an FAA-sponsored national airport system plan whose purpose is to identify the airports that are important to national air transportation. Being identified within the scope of NPIAS makes an airport eligible to receive grants under the Airport Improvement Plan (AIP) for the planning and implementation of airport capital improvements and infrastructure development. Specifically, the NPIAS defines an airport by its service level, which reflects the type of service that a given airport provides for its host community. This service level also defines the funding categories established by Congress to assist in the distribution of funding resources for airport development.

As identified in the 2005-2009 NPIAS, New Castle Airport (ILG) has been identified as a General Aviation Reliever (RL) airport. Airports holding this designation are classified as either large or small GA relievers depending on a number of operational and demographic characteristics. Over the years, ILG has held the designation as a large GA reliever due to its location within 50 miles of a major commercial airport (PHL) with more than 50 based aircraft. In addition, the FAA further defines such airports as GA or Commercial Service public-use airports which relieve congestion at a Primary Service airport by providing general aviation and small commercial operations with an alternative point of access to the overall community.

New Castle Airport is also a CFR 150 FAA Part 139 certificated¹ airport, although it has not been able to sustain scheduled passenger air service. Most recently, (June 2006) Delta Air Lines, through its *Delta Connection* small lift provider Atlantic Southeast Airlines (ASA) started twice daily service to Atlanta Hartsfield-Jackson International Airport (ATL), using 40 and 50 seat regional jets. After 14 months of service, Delta announced it planned to discontinue all scheduled service from ILG, with its last flight operating on September 6, 2007. As a result of the passenger activity produced by this service, New Castle Airport earned a designation as a *Primary Commercial Service Airport* in 2007.

New Castle Airport currently services a variety of general aviation and military aircraft including small single-engine aircraft, large corporate jets, and military transport aircraft. In calendar year 2003, the Airport handled 118,425 annual operations. In 2004, 282 aircraft were based at the Airport, including 16 helicopters and 9 military aircraft. New Castle Airport serves as a reliever airport to Philadelphia and has a large number of corporate jets based at the airfield (66 in 2004) compared to most general aviation airports (see Table 2).

Based Aircraft		Annual Operations	
Single-Engine Piston	167	Air Carrier	62
Multi-Engine Piston	24	Commuter	0
Jet	66	Air Taxi	4,111
Subtotal	257	General Aviation Local	57,299
Helicopters	16	General Aviation Itinerant	46,827
Military	9	Military	10,126
Total	282	Total	118,425

Source: New Castle FAA Airport Master Record dated 11/25/2004 and FAA OPS TAF Report

After New Castle County transferred its interest in the airport to DRBA in 1995, the DRBA embarked on a multi-year effort to expand the airport's real estate and development posture through two specific means.

One such initiative was to have the Authority acquire existing airport hangars, where possible, in fee simple. In this regard, two such properties were purchased; the Hercules hangar and the series of hangar facilities known as the Kraft Hangars. As of this writing, DRBA was close to settlement on a deal to acquire the former MBNA hangar as well. The Authority has long believed that the rental market for the "multi-tenant" hangaring of aircraft was stronger than the market for leasing of an entire facility to a prospective customer.

The other DRBA initiative was to boost hangar capacity at the airport by becoming a developer of hangar facilities itself. This specific effort took on two formats; (1) build to suit, and (2) build on "spec". In this manner, the DRBA financed and built 10 such hangar facilities

¹ A Part 139 Certificate refers to regulations contained in the CFR 14, Part 139 and is required for all airports served by passenger aircraft within more than 30 seats.

as well as a new air traffic control facility for the FAA who at the time was a tenant in the existing terminal facility.

3.3 Airport Layout Plan

ALP Overview

As stated above, any airport which hopes to be eligible for and be the recipient of federal grant funds must have an FAA-approved Airport Layout Plan (ALP). For an airport, the ALP can be likened to a deed on a property in that it is the official federally recorded delineation of all infrastructure, facilities, buildings, equipment, and property boundaries recognized by the FAA. This document takes on added meaning in that, once recorded, the sponsor (airport owner or operator) can then apply and compete for a matching share of annual federal capital funds programmed for such purposes.

For most sponsors, the development of an ALP is performed within the context of and alongside an Airport Master Plan (MP) which is a more of a narrative and graphic depiction of the airport and its future potential. A Master Plan itself is usually eligible for federal matching funds, and as such, must be developed according to strict FAA criteria and guidelines for such studies. However, the development of a MP is not required to establish or update an ALP, which is an activity which can be performed based on the specific immediate needs of an individual sponsor.

Within the past 20 years, New Castle Airport has had the development of at least one comprehensive, approved MP and a series of ALP updates associated with many “pen and ink”, or interim changes. Currently, the DRBA is engaged in the development of a new ALP which will define the ultimate development of the airport over the next 20 years.

3.4 Record Subdivision Plan for Airport Development

Overview

The impact and constraints on development at the airport as a result of the 2003 Recorded Plan for New Castle Airport (MRP) is significant. The applicability of this recorded development plan effectively places a legal limitation on the amount of square feet which can be added to the airport without potentially incurring significant infrastructure improvement costs for the airport as a whole.

The plan as depicted in Fig. 3.1 shows the limits for new construction in total acres as 16.74 in cumulative building gross floor area (gfa), 14.63 acres of building(s), and 76.85 acres of additional pavement area. These represent the upper limits of that which could be constructed without requiring the existing airport structures to become code compliant. In actual square footage, an analysis was performed of the airport’s ultimate development against the gross floor area figure of 779,110 s.f. (Major and Minor Record Development). The analysis shows that, as currently depicted, the airport could have up to 848,856 s.f. of additional recorded development by the end of the forecast period, leaving the airport 69,746 over the upper limit of development imposed by the County.

Since the plan was approved in 2003, the airport has developed a total of 323,874 gfa of new recorded development such as the Dassault Falcon Jet paint hangar. As of 2007, the airport had a remaining balance of 455,234 of gfa which could be developed as new or replacement facilities.

3.5 Capital Improvement Plan

DRBA has traditionally organized and implemented its capital improvement programs and infrastructure improvements along three specific lines. These have been those projects which are (1) revenue-producing in nature, (2) DRBA-funded without benefit of a matching share from an outside agency, and (3) funded under the federal AIP Program administered through the FAA. A summary of the New Castle Airport proposed capital improvements plans from 2001 thru 2012 is outlined below. These figures do not represent any federal grants funds.

Table 3 - New Castle Airport Capital Improvement Plan (2008-2012)						
	2008	2009	2010	2011	2012	Total
DRBA INFRASTRUCTURE						
Minor Capital Equipment	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$750,000
Minor Capital Improvements/Enhancements	\$300,000	\$200,000	\$200,000	\$200,000	\$200,000	\$1,100,000
Miscellaneous GEC Services	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000	\$375,000
Terminal/Parking Lot Improvements	\$100,000	\$750,000		\$100,000	\$700,000	\$1,650,000
Maintenance Ops/SRE Storage Facility			\$25,000	\$250,000	\$250,000	\$525,000
SUBTOTALS		\$				
FAA FUNDED INFRASTRUCTURE						
Obstruction Removal (Phase I)	\$50,000	50,000				\$100,000
Runway 1-19 Safety Area Improvements	\$200,000					200,000
Acquire Easements for Approaches	\$10,000	\$50,000	\$50,000			\$110,000
Runway Safety Area Improvements (Runway 1)	\$50,000	\$250,000	\$250,000			\$550,000
Runway 9-27/Taxiway K (West) Rehabilitation/RSA Improvements	\$300,000	\$550,000				\$850,000
FAA-Supported Snow Removal Equipment Purchases	\$20,000	\$0	\$40,000	\$0	\$20,000	\$80,000
Security Enhancements	\$5,000	\$35,000	\$110,000	\$0	\$0	\$150,000
Terminal Improvements/New Terminal (Study/Design/Const)	\$25,000			\$25,000	\$50,000	\$100,000
Taxi Lane G/T-Hangar Apron Rehabilitation		\$120,000	\$600,000	\$600,000		\$1,320,000
Taxiway B/E Rehabilitation			\$100,000	\$400,000	\$300,000	\$800,000
Obstruction Removal (Phase II)				\$25,000	\$75,000	\$100,000
Taxiway A Rehabilitation				\$50,000	\$270,000	\$320,000
*Taxiway H Construction					\$50,000	\$50,000
SUBTOTALS						
*May be accelerated to gain access to non-contiguous 38 acre site.						
TOTALS	\$1,195,000	\$2,280,000	\$1,650,000	\$1,925,000	\$2,190,000	\$9,330,000

3.5.1 Examples of Revenue Producing Projects

Below are listed some examples of recent DRBA revenue producing capital investments in hangars, infrastructure and a new FAA Control Tower. Some of the projects were never constructed/built and appear here only to define those projects presented for consideration. For instance, DRBA only participated in the infrastructure portion of Dassault's new paint hangar. It is typical for the financing and development methodology to be the subject of negotiation between the parties in any proposed development. However, in its CIP, DRBA must account for and explain the intended use of any capital funds to be used in relation to such projects.

	2001	2002	2003	2004	2005	2006
REVENUE PRODUCING						
Hangar 7	2,340,000					
Hangar 8	2,340,000					
SW BBJ Hangar (not built)						
Hangar 9		2,600,000				
Hangar 10		2,600,000				
Hangar 11 not built						
Hangar 12 not built						
Hanger 9/10 Construct (extra cost)			1,800,000			
38 Acres Infrastructure						
Dassault Falcon Jet Paint Hangar Infrastructure only						
Office Bldg. Rehab	600,000	600,000				
SW Aviation Industrial						
AmPort Improvements	500,000					
Flaconject Improvements	500,000					
New GA Terminal (const)						
DJF Tenant Improvements	4,200,000					
Existing Terminal Fit - Out (1st Floor) (2 nd Floor)						
Design/Construct			500,000			
TOTAL	19,873,000	18,682,000	16,420,000	2,390,000	3,645,000	2,540,000
*Some projects included in total were not completed or represented the total planned expenditure at the time						

4. Airport Characteristics

4.1 Existing

Airside Facilities: The airfield facilities at New Castle consist of three active runways, thirteen taxiways and several aircraft parking ramps. The Airport reference code explains the use of the runways and taxiways of the airport.

Airport Reference Code (ARC)-was developed by FAA as a system to correlate airport design criteria to the physical (wingspan) and operating (approach speed) characteristics of the most demanding aircraft currently using or expected to use an airport with greater than 500 annual operations. The classification system, as contained in the FAA's AC 150/5300-13 Airport Design (Change 8), which is determined by approach speed in knots, now supersedes the former Utility and Transport Airport Role Classification system. The ARC coding system consists of two components. The first component, depicted by a letter, designates the aircraft approach category; and the second component, depicted by a roman numeral, designates the airplane design group, which is determined by the wingspan. The following table identifies the Aircraft Approach Categories and Aircraft Design Groups that have been established:

Aircraft Approach Category	Aircraft Design Group
A- Speed less than 91 knots	I- Wingspan to 48 feet
B- Speed 91 to 120 knots	II- Wingspan 49 to 78 feet
C- Speed 121 to 140 knots	III- Wingspan 79 to 117 feet
D- Speed 141 to 165 knots	IV- Wingspan 118 to 170 feet
E- Speed greater than 165 knots	V- Wingspan 171 to 213 Feet
	VI- Wingspan 214 to 261 feet

The ARC and design aircraft are used to determine several key airport design issues such as: separation distances between runways, taxiways, and objects: and pavement strength and width. The current Airport Layout Plan (ALP) for New Castle identifies an ARC of D-III for runways 1-19 and 9-27, and an ARC of B- II for Runway 14-32. Recent pavement projects at the airport have been designed for the Boeing Business Jet (BBJ). However, The BBJ is a C-III aircraft. Furthermore, the airport experiences several thousand annual operations by the Delaware Air National Guard's C-130, a C-IV aircraft. The Airport is also used by several large corporate jets ranging in speed and size from a C-II to D-III. These jets also create several thousand annual operations per year at New Castle. Recent scheduled air service by Delta Air Lines has added operations by the CRJ (ADG C-II) with flights twice daily.

Runways- The Airport has three intersecting runways. Runway 1-19 is the Airport's primary runway and is 7,012 feet in length, 150 feet in width, and has a high Intensity Runway Lighting System. Runway 9-27 is also a primary runway and is 7,181 feet in length and 150 feet in width and has a High Intensity Runway System. Runway 14-32 is most often used by General Aviation aircraft and is 4,603 feet in length and 150 feet in width.

Apron Areas- There are several apron areas to park and tie down the based and transient aircraft using the airport. The Terminal apron is directly adjacent to the northwest side of the terminal building and is used for the enplaning and deplaning of passengers and for the short-term parking of transient aircraft. The apron is 725 feet long by 250 feet wide. However, the entire apron is not available for aircraft parking due to the required separation from Taxiway A. In total, there is about 116,000 square feet of apron available for parking aircraft. About 30,000 square feet is used as tie down space for single and twin engine piston or turbo-prop aircraft, the remaining 86,000 square feet is used for the temporary parking of corporate and charter jet aircraft.

There is a cargo apron located in the northeast quadrant of the Airport. One portion of the apron is 400 feet long by 225 feet wide and another is 150 feet long by 170 feet wide, providing a total of 115,500 square feet of area for cargo aircraft.

There are two apron areas on the airport used to park based and transient aircraft. These apron areas are operated by the airport's FBOs. The first apron is located adjacent to AvCenter and Aero Taxi. The apron is about 208,000 square feet in size, of which, about 36,000 is paved and the remaining 172,000 is turf. The second apron is located adjacent to Red Eagle Aviation. The total apron area is about 157,000 square feet in size, of which, 120,000 is paved and 37,000 is turf.

The final apron is located adjacent to the T-hangar area. There are about ten paved aircraft tie downs in this area. The size of the tie-down area is about 24,000 square feet, of which, half is paved and half is turf.

Airfield Lighting- The Airport has a variety of lighting aids to facilitate identification, approach, landing, and taxiing operations at night and in adverse weather conditions.

Identification Lighting: The location and presence of an airport at night is universally indicated by a rotating beacon. It is located atop the air traffic control tower, which is situated on the airfield between Taxiways A and D. The beacon is an optical system that projects two opposing beams of light, one green and one white, signifying this as a public-use civilian airport.

Obstruction Lighting: Near an airport, obstructions are marked and or lighted to alert pilots to their presence.

Approach Lighting: Approach lighting systems are used in the vicinity of runway thresholds as adjuncts to electronic navigational aids for the final portion of instruments flight rules (IFR) approaches and as visual guides for nighttime approaches during visual flight rules (VFR) conditions. These lighting systems provide the pilot with important clues concerning the aircraft's alignment, roll, height, and position relative to the landing threshold.

The most notable lighting system at the Airport is the SSALR (Simplified Short Approach Lighting System with Runway Alignment Indicator Lights) located on the precision approach to Runway 01. The Omni-directional approach Lighting System (ODALS) located on the approach to Runway 9 was decommissioned by the FAA and removed by DRBA. On the current Airport Layout Plan (ALP) it is proposed that Runways 01 and 09 be equipped with medium intensity approach lighting system with runway alignment indicator lights (MALSR).

Runway and Taxiway Lighting: Another essential element is pavement edge lighting. Runway 19 is equipped with runway end identifier lights (REIL). Runways 1-19 and 9-27 are equipped with white, high intensity runway lights (HIRL) to aid pilots landing at night and during periods of low visibility and inclement weather. Runway 14-32 has medium intensity runway lights (MIRL). All three runways have red and green threshold

lights that identify the location of the runway ends. In addition, all of the taxiway edges are equipped with blue, medium intensity taxiway lights (MITL). Runways 14-32 and 1-19 have the marking and lighting for land and hold short operations (LAHSO) and in Fiscal year 2008/9 Runway 9-27 will be equipped to handle LAHSO.

Navigational Aids

In addition to the visual aids described above, there are several ground based Navigational Aids (NAVAIDs) located on and near the airport. They are functionally classified as en route navigational aids, terminal area navigational aids, and landing aids.

En Route Navigational Aids: Locational aids operating for the purpose of en route air navigation permit in-flight aircraft to navigate accurately using only instruments. A non-directional beacon (NDB) provides a general purpose low frequency radio beacon on which an aircraft can determine its bearing relative to the transmitter. The Hadin NDB is located south of the New Castle Airport and serves as an outer marker in the ILS configuration (see Instrument Landing System below). A VHF Omni-directional Range/Tactical Air Navigation (VORTAC) is also an en route aid that transmits radials in an infinite number of directions from a central station. It is the most widely used navaid and the primary en route facility on which the airways system of the United States is established. Operating in conjunction with the ground station, a properly equipped aircraft is able to translate the VORTAC signals into visual display of both azimuth and distance. The DuPont VORTAC is located on the airfield, in the center triangle established by the runway configuration. It serves as a fix for a number of instrument approaches to the New Castle Airport.

Terminal Area Navigation and Landing Aids: There are several visual and electronic navigational aids available to assist pilots landing aircraft. The instrument landing system (ILS) is an approach to landing aid designed to identify an approach path's exact alignment. ILS systems are installed to allow certified pilots with specially equipped aircraft to land during periods of very low visibility. Runway 1 is equipped with a Category I ILS approach that will allow landings with a cloud ceiling down to 200 feet and one-half mile visibility.

A Microwave Landing System (MLS) provides precision approach capability for runways at which an ILS may not be feasible due to ILS frequency band congestion, FM Radio transmitter interference, or because of airspace/obstruction conflicts. The curved approach capability provided by MLS will permit the design of instrument approach procedures that more closely approximate traffic patterns used during fair weather conditions. Runway 9 is equipped with a Category I MLS. (The FAA is currently planning on decommissioning this equipment)

Global Positioning System (GPS) is a space-based radio positioning, navigation, and time-transfer station developed and maintained by the Department of Defense (DOD). GPS, at one time, utilizes three of the 24 strategically placed satellites to calculate the aircraft's position and, from there, determine the distance, bearing, and estimated time en route to the next waypoint. GPS can be used in conjunction with or in place of the VOR Runways 1-19 and 9-27 and NDB Runway 01 instrument approaches at the Airport.

Visual approach slope indicators (VASI) is a system of lights located near the runway end which provide visual descent guidance information during an approach to the runway in relatively good weather conditions. The four-box VASI's provide the pilot with positive three-degree glide slope guidance, and are located on the approaches to Runways 19 (this will be a PAPI by summer 2008), 27 (this will be a PAPI by summer 2009) and 32 (non-standard sitting on 32). On the current ALP, a VASI is proposed on Runway 14.

The precision approach path indicator (PAPI) provides the pilot with a safe and accurate glide slope on final approach to the runway. A row of PAPI light housing assemblies (LHA's) placed perpendicular to the approach path are seen by the pilot in combinations of red and white to indicate a path that is too high, too low or correctly on slope. Runway 9 is equipped with a PAPI. The current ALP recommends the installation of the PAPI on Runways 1-19 and 27.

Airspace & Air Traffic Control Tower- In August 2000, a new 112 foot Air Traffic Control Tower was commissioned, replacing the 1955 structure located on top of the roof of the existing Terminal Building. The ATCT is now located on the airfield northeast of the Terminal Building. In addition to the tower, there is automobile parking and a 6,200 square foot administrative base building that provides office space for FAA Air Traffic and Airway Facility personnel.

New Castle Airport is encompassed by airspace controlled by the Wilmington air traffic control tower-a level II, VFR, non-approach control tower located on the airfield. Local controllers govern the airport traffic area that consists of the airspace within a five-mile radius of the Airport and up to 3,000 feet above ground level. The ATCT is responsible for all aircraft arrivals, departures, and ground movements between the hours of 6:30 am and 11:30 pm.

Terminal & Landside Facilities- The terminal area is located on DuPont Highway (U.S. 301), three miles south of the Interstate 95 and 295 interchange. The airport has a signed, dedicated entrance road from DuPont Highway that leads to an internal circulation road with 150 feet of terminal curb frontage and a parking lot for 253 vehicles. Presently a number of spaces are leased for rental car parking. In addition, spaces are designated for DRBA employee parking.

General Aviation Facilities- The provision of services and facilities for general aviation aircraft is the primary activity at the airport. New Castle is home to 282-based aircraft and 50 companies, many of which have large corporate flight departments located on the airfield. General Aviation and Corporate facilities are located in the Terminal Area, the southeast quadrant of the Airport, the northwest quadrant, and southwest quadrant of the Airport (see Figure 1-2). The Airport has four full service FBOs: Aero Taxi, Atlantic -Wilmington, Dassault Falcon Jet, and Aeroways, Inc. In addition, there are 72 T-Hangars and 30 aircraft tie down spaces. Combined these facilities allow the DRBA to offer one of the largest and most complete general aviation service airports on the east coast. A description of the tenants and facilities by quadrant are described below.

Terminal Area

Flight Safety Facilities: Flight Safety provides flight training to pilots from around the world and is located on the east side of the airport adjacent to the Terminal Building. Flight Safety operates out of a 40,000 square foot building.

Corporate Aircraft Hangars: There are four corporate aircraft hangars located south of the Terminal Building that are used by private tenants, most of which are small corporate flight departments. Each hangar is approximately 22,000 square feet (15,000 square feet for aircraft and 7,000 square feet for office space).

Southeast Quadrant

Dassault Falcon Jet: Dassault Falcon is an FBO operating five large hangars and an office complex. Dassault provides major maintenance repairs for Falcon Jet Aircraft and serves as a service facility for transient aircraft operators.

DuPont: DuPont corporate flight department operates out of a hangar located north of Dassault's facility.

Corporate Midfield Complex: Adjacent to and across Taxiway A from Dassault's facility is the Midfield Complex. This complex has six aircraft hangars, with additional space to accommodate six more hangars. Each hangar is approximately 22,000 square feet (15,000 square feet for aircraft and 7,000 square feet for office space).

Northwest Quadrant

Boeing Aircraft Company: The Boeing Aircraft Company has a complex that is comprised of an office building and two 30,000 square foot hangars.

Campbell's Soup Flight Department: The Campbell's Soup flight department operates from 15,000 square foot hangar.

Red Eagle Aviation: Red Eagle Aviation provides flight training, rentals, and other aircraft services. They operate out of a 15,000 square foot facility.

Elcorta operates from a 20,000 square foot building, providing aircraft maintenance services to the corporate industry.

AvCenter: AvCenter has a small storage hangar in this quadrant that is used for the storage of cargo and airplane supplies.

Southwest Quadrant

General Aviation T-Hangars: The General Aviation T-hangar area consists of six buildings. There are 72 T-Hangars that house a variety of single and multi-engine aircraft. Currently all T-Hangar renters have the ability to drive their personal vehicles to their hangars.

Aero Taxi/AvCenter: Aero Taxi and AvCenter are FBOs. Both tenants provide major line and fueling services for all general aviation aircraft on the Airport, pilot training, and serve as the primary drop-off point for transient passengers that use the airport. Also located in this area are 30 aircraft tie-down positions.

Support Facilities

Airport Rescue and Firefighting-The purpose of an ARFF facility is to save lives by maximizing emergency response and intervention during an airport crisis. The ARFF crew conducts fire fighting rescue operations and fire prevention services. More specifically, the ARFF provides emergency assistance, inspection of fuel farms, fuel trucks, and commercial sites; compliance with FAA standards on safety, equipment, and training; and is the medical first responder for an airport. The Delaware Air National Guard currently has an 11,700 square-foot ARFF building with four vehicle bays.

Rental Car Facilities-Two rental car companies currently operate in the main Terminal Building: Avis Rent-A-Car, and Alamo/National. There is additional demand for new rental business as identified by the interest of both Budget and Hertz to locate at the terminal. The rental car companies lease space in the automobile parking lot in front of the Terminal Building.

Airport Maintenance-The DRBA maintenance department is located within the DEANG base complex. The maintenance facility is comprised of several buildings that house airport equipment, offices, and crew room.

Fuel Storage and Capacity-There are many fuel storage tanks located at the airport used to store aviation fuel; some are above ground tanks and other are below ground. These facilities consist of 8 above ground bulk storage tanks, 7 underground storage tanks, and 13 mobile re-fuelers used to distribute fuel to the aircraft.

Military Facilities New Castle Airport is the home to the *Delaware Air National Guard (DEANG)*. The base is located along Basin Road on the northeast side of the Airport. The complex is comprised of approximately 30 buildings, including aircraft hangers, support offices and storage facilities. The DEANG is a military base that employs 250 personnel on a weekly basis, but increases to 1,000 during drill weekends or active duty assignments. The primary mission of the DEANG is to operate the C-130 aircraft and to transport cargo and personnel in support of military operations around the world.

The Delaware Army National Guard- operates a facility west of Boeing's ramp. The Army guard is an active flight wing that operates the UH-60 Black Hawk helicopter. Their operation is similar to the Delaware Air National Guard and has 25 active personnel, which can increase to 200 during drill weekends. The hangar and office complex is fenced in and there are limited points of access from the landside to airside

4.2 Future

The future configuration and layout of New Castle Airport will remain significantly unchanged as it pertains to runway layout and the general location of many facilities such as the Air National Guard, most corporate hangars, the existing terminal building, and the air traffic control tower. Traditionally, airports are measured on their capacity in the four critical areas governing its accessibility and reliability. Each of these is discussed below.

A. Airspace (Aeronautical)

The general layout of the airspace surrounding New Castle Airport was the subject of discussion and environmental analysis in the 2007 New York/Newark/Philadelphia Airspace Redesign Study authored by the FAA. While the findings and conclusions contained in this study are meant to better align the congested airspace in the northeast, New Castle Airport's ability to perform independently of the major airports has been negatively affected. Instrument departures and arrivals to and from ILG are "stacked" along with those at PHL. This may have the undesired effect of causing delays at ILG when there may be no visible traffic conflicts with actual aircraft operations at the airport.

It will be necessary to work with FAA to evaluate the planning, evaluation, introduction and publication of one or more Standard Instrument Departures (SID's). The purpose of a SID will be to allow participating aircraft on an instrument flight plan to benefit from expedited departures procedures from ILG which may be altitude or directionally restricted so as to avoid PHL traffic. This concept works well at many airports in the region in this significantly congested airspace flow.

B. Airfield (Aeronautical)

As stated above, the general configuration and layout of New Castle's three runways will be largely unchanged over the forecast period. No runway length is expected to be added to the airport aside from a possible "shifting" of runway 9-27 to accommodate safety area requirements. More importantly, due to existing land constraints, ILG will likely never be the beneficiary of a parallel runway configuration so desired by the airline community because of the significant operational benefits of this layout type. Most airports that ultimately attract an airline as a hub or focus city have one or more sets of parallel runways that allow for simultaneous arrivals and departures, far exceeding the airfield capacity of airport like ILG which possess "intersecting" runways. The capacity of an intersecting runway system is limited due to the need for positive "separation" of all aircraft operations on each runway. Such configurations do not allow independent arrivals and departures.

However, minor enhancements to New Castle's taxiway system will be accomplished to more efficiently allow ground operations to and from runways to occur providing the most direct route for aircraft to the active runway. It is possible that during the forecast period that portions or all of taxiways G and A may be decommissioned or truncated for security and operational reasons. In addition, taxiway B will be aligned for parallel operations to runway 1-19, and taxiways H and D will be extended to provide access to the new airline terminal site and the non-contiguous 38 acre parcel across Old Churchman's Road.

C. Terminal (Building)

Throughout this report, much discussion is devoted to the subject of being prepared for the eventuality of the maturation of scheduled air service at ILG. One of the key components of such a program is the existing need to earmark and reserve land and a site able to be developed for a new terminal and associated support facilities, including public roadway access and auto parking. Overall, the existing terminal site will have limited capacity or operational value once full build out is achieved. However, it is expected that the existing site will have on-going use as a general aviation terminal and apron or other irregular use.

If no suitable on-airport current site is deemed acceptable for the airport's future needs, then an existing off-airport site such as the "Greggo-Ferrara" parcel may need to be acquired in part or in whole by the airport. Such acquisition costs should be reflected in the airport's Capital Development Plan for planning and programming purposes.

D. Landside (Non-Aeronautical)

The major change in the airport's landside configuration will surround the above mentioned development and access to the new airline terminal site, if identified. It is recognized that one of the major constraints associated with the existing terminal is/are the traffic and circulation implications given the terminal's proximity to State Highway Route 13 or Dupont Highway. The 2006 New Castle Airport Master Plan discusses this issue in more detail than can be covered in this study.

5. MARKET ANALYSIS

5.1 Market Summary

Commercial Aviation

Conventional airline service at New Castle Airport (ILG) has been difficult to sustain in the past, due to the nearby location of Philadelphia International (PHL). However, the large population base and catchment area for the Airport may be enough to meet the needs of a point-to-point, low-fare carrier. At both PHL and BWI, there was significant growth over the last 10 years, while Lehigh Valley International Airport (ABE) remained somewhat static. For the region, total enplanements at the airports grew from 15.9 million to 23.6 million - an average growth rate of 4.5 percent per year. During the same period, population in the three impacted MSAs grew from 9.05 million to 9.68 million or at an average growth rate of 0.6 percent per year. Thus, airline enplanements outgrew local population bases by roughly 3.9 percent per year.

For this study, a model was used that estimates total potential air travel demand from small-to-medium sized cities located near major alternate airports. The type of airline service available turns out to be a significant factor in measuring the actual ability of an airport to capture local airline passengers. In this regard, airports with large jet service enplaned more *per capita* than did airports with regional jet service only. Similarly, airports with regional jet service enplaned more per capita than airports with turbo-prop service only. For these reasons,

three estimates of local demand were generated: one for the total service area and two for the probable immediate demand that could be captured with 1) good local service using large jet aircraft such as the A319 in service and, 2) for regional jet aircraft (50-seat or less) only.

	Annual Enplanements
• New Castle County total passenger potential:	801,000
• Large jet aircraft market capture potential:	290,900
• Regional jet aircraft market capture potential:	87,300

These numbers are based on the *average* performance of other cities across the United States. Actual performance at ILG could be either higher or lower than these averages.

The recent failure of Delta's ASA affiliate at ILG could be attributable to a number of factors, including:

- Lack of marketing and adequate promotion of the service by Delta.
- Lack of consumer recognition of the ILG brand.
- Lack of flight frequencies - convenient times for departure and arrival not suitable.
- Southern hub (Atlanta), excluded all north and northeast corridor traffic flow.
- Delta's assignment of an unsuitable 40 seat aircraft type on the route whose economics are more aligned with shorter (less than 700) mile segments.
- A comparatively unattractive fare structure (to PHL and BWI) on most flight segments out of ILG, driven by the item above.
- Customer and airline employee confusion between the two Wilmington's, both of which had direct service from Delta's Atlanta hub; Wilmington, DE (ILG) and Wilmington, NC (ILM). Both bags and customers at times ended up in the wrong city.

Thus, deficiencies in the airline's commitment to the market, operational characteristics, and overall quality of service were likely at the core of the problem. With better planning on the part of the airline and the airport, some of these problems could be avoided in the future through an improved marketing partnership and use of economical aircraft equipment.

Corporate Aviation

Many businesses throughout the U.S. depend on scheduled commercial service airlines, as well as on general aviation aircraft, to add to their productivity and efficiency. The Delaware Aviation System is essential to businesses throughout the State, operating as an effective conduit to clients, as well as to corporate and manufacturing facilities. Because so many companies are incorporated in Delaware and since it is the only state with no scheduled air service, general aviation is an important component for air access to the State. New Castle Airport is a key element of that system. Without an efficient airport system, the State would be hampered in its ability to participate in an increasingly global marketplace, since there is often no practical alternative to air transportation in today's environment. Business aviation, and particularly corporate general aviation, not only supports the economic vitality of individual companies, but also for the State as a whole.

Business aviation is one of the quickest growing facets of general aviation, and consists of companies and individuals using aircraft as a tool to improve efficiency and productivity in their businesses. Many of the nation's leading employers who utilize general aviation are also members of the National Business Aircraft Association (NBAA). Data from NBAA show that many of the top U.S. businesses use general aviation aircraft. Specifically, the NBAA's Business Aviation Fact Book 2001 indicates that approximately 69 percent of all businesses included in the Fortune 500 operate general aviation aircraft. Additionally, 89 percent of the Fortune 100 companies operate general aviation aircraft. Business use of general aviation aircraft ranges from the rental of small, single-engine aircraft to multiple aircraft corporate fleets that are supported by dedicated flight crews and mechanics. The use of general aviation aircraft allows employers to efficiently transport priority personnel and air cargo. Businesses use general aviation aircraft to link multiple office locations and to reach existing and potential customers. The use of business aircraft by smaller companies has escalated as various chartering, leasing, time-sharing, interchange agreements, partnerships, and management contracts have emerged. NBAA statistics support this fact by demonstrating that the number of companies operating business aircraft increased from 6,584 in 1991 to 9,317 in 2000, an increase of approximately 40 percent.

While recent years have been marked by fluctuations in general aviation activity across the country, general signs of an economic rebound combined with changes in the business jet market are expected to affect continued positive growth for the general aviation industry and airports with adequate runway length and instrumentation (such as New Castle) in the near term. One indicator of this rebound is the increase in fractional jet ownership and use. Fractional ownership can be considered an out-sourced solution to the ever-growing cost of building and maintaining a corporate flight department. Just as segments of other industries have devised strategies for cutting costs while maintaining high standards of quality and service, so has the business aviation segment of the general aviation industry. For this reason, primarily, fractional ownership has emerged as a more cost-effective and appropriate solution for businesses seeking to tailor the use of corporate travel to their specific business mission. Other significant factors in the selection of fractional jet ownership and use include:

- **Ease of use** – Since fractionals are not wholly owned assets of individual corporations; the burdens of ownership (i.e., management, maintenance, crew, insurance, etc.) are no longer the sole responsibility of corporate employees.
- **Security considerations** – In the post-September 11th environment, personal security during travel has become an issue of paramount importance. Fractional companies offer the assurance of operating safe and modern aircraft, well-trained pilots, and the comfort of a personal and controlled environment.
- **Supplemental purposes** – Fractions can serve as support to corporate flight departments who are near capacity when demand for corporate travel increases due to unpredictable business trends or cycles.

Since the mid-1990s, a handful of fractional business jet ownership companies (primarily four U.S.-based companies: NetJets, FlexJet, Travel Air, and Flight Options) have led the market, attracting new customers from first and business-class sections looking for an alternative to scheduled air service. These fractional ownership arrangements have also experienced rapid growth. In 1999, NBAA estimated that 2,591 companies used fractional ownership arrangements; by 2000, that number had grown to 3,694 companies, a growth of over

40 percent in a single year. While growth in fractional use increased significantly by 2001, the September 11th tragedy has caused this trend to stall in recent years. However, growth in interest and use of fractional aircraft ownership is anticipated to experience a revival because of several factors, including the impending economic rebound and security changes mandated by the Transportation Security Administration (TSA) in the wake of the September 11th tragedy.

For years, New Castle Airport has focused on increasing its share of the based corporate aviation fleet. This process has been successful, in that ILG enjoys a market share of 56.4% of the jets located in our service area. This includes both PHL and Northeast Philadelphia airports. However, in recent years, ILG has lost some key corporate aviation clients, creating a temporary decline in operational activity, landing and fuel flowage revenues. Due to the somewhat cyclical nature of corporate aviation, placing all of the revenue producing eggs in one basket can be a risky strategy in an economic downturn. Due to high fuel prices and other business phenomenon, companies may be planning to downsize their corporate aviation departments or move to other parts of the country as mergers and acquisitions change the corporate landscape in our service area.

For this reason, our corporate aviation marketing program can never be satisfied with the status quo. We must always be seeking that new client. From the estimates of general aviation growth presented earlier, it was shown that a total of 209 new aircraft are projected to be in our service area by the year 2025. During that same period nationally, the corporate aviation fleet is anticipated to more than double. Simply keeping pace with the national trends, we could expect to grow from 117 jets in our service area to 322 - virtually all of the projected growth in the region. Because that is not likely, we have scaled back the growth to one-half of the national trend, resulting in a year 2025 total of 220 jets. Keeping our current market share, our portion of this market can be anticipated to total 124 jets - almost double our current total. This market potential has enormous implications toward our landside development needs and our ability to accommodate this demand. It also has significant impact on our future revenues.

General Aviation

To assess the size and direction of growth of the general aviation market, an inventory of based aircraft in the service area was taken. For New Castle Airport, the service area is roughly based on a 30-minute driving distance for smaller general aviation aircraft and a 60 minute driving distance for larger corporate and business jet aircraft. Within this area are located a total of ten (10) public-use airports and numerous private, restricted-use airfields. The public-use airports located within New Castle's service area are: Philadelphia International, Northeast Philadelphia, Chester County (PA), Brandywine (PA), New Garden (PA), Spitfire (NJ), Summit (DE), Delaware Airpark (DE), and Cecil County (MD).

Table 1 presents a listing of the airports and based aircraft, by type at those airports. As shown, there are a reported total of 1,092 (including military) aircraft based at the public-use airports within New Castle Airport's defined service area. The majority of these (70.9 %) are single engine aircraft. Of the 117 jet aircraft in the service area, 66 are located at New Castle, and this airport also bases roughly 18.7 percent of the area's multi engine aircraft (128). Four airports in the service area have based jets: Philadelphia International, Northeast Philadelphia, New Castle, and Chester County.

Table 1 - Facility Comparison

Airport	Airport Code	Number of Based Aircraft					
		Jet	Multi-	Single	Helicopter	Other	Total
Brandywine	OQN	0	10	95	6	0	111
Cecil CO.	58M	0	3	46	0	3	52
Chester CO. Carlson	40N	19	12	78	0	0	109
Delaware Airpark	33N	0	2	43	1	0	46
New Garden	N57	0	6	118	3	13	140
New Castle	ILG	66	24	167	16	9	282
Northeast Philadelphia	PNE	13	54	126	10	0	203
Philadelphia Int	PHL	19	10	2	0	0	31
Spitfire	7N7	0	1	37	4	0	42
Summit	EVY	0	6	63	7	0	76
TOTAL		117	128	775	47	25	1,092

Source: Airport Master Record as Published October 2007 (www.airnav.com).

*Other: Ultralite, Glider, or Military

The future size of the general aviation market was estimated using the FAA's Terminal Area Forecasts for each of the airports in the service area. In this regard, the current total of 1,083 general aviation aircraft is anticipated to grow to 1,292 by the year 2025. The difference between the current total and the future total is the anticipated market for this service area. A total of 209 new general aviation aircraft are projected to be in our service area by 2025. These forecasts do not assume any proactive marketing methods or other incentives to capture additional market share. Rather, they are based on conservative FAA forecasting technics and can be considered the baseline or benchmark forecast of market potential.

Our job will be to capture a strategic portion of this market, focusing on both high end corporate as well as the smaller single and twin engine business aircraft. Our business plan alternatives will examine the desired mix of these aircraft types.

Cargo

The cargo market for the Philadelphia metroplex is anticipated to double by the year 2020. Planners worry that the wave of demand will consume all of the current infrastructure. Because most of this demand will be trucked, highways and truck stops will be over capacity. Distribution centers connected by roads through residential area will not be able to accommodate truck traffic. With the anticipated doubling of current demand within 14 years, it is believed that the mode of cargo distribution will be forced to incorporate more rail and air. Currently, air cargo is a very small portion of overall demand, but as it doubles, capacity at PHL will be strained. Currently UPS uses PHL as a mini-hub. That UPS demand will not spread to ILG. However, the future may bring new or regional air cargo competitors to the market.

Difficulties of serving air cargo at ILG involve the need for night-time operations. In the

past, night air cargo operations have stirred residential neighborhoods to action. Numerous complaints were received when the GM plant had to use just-in-time air cargo to keep their line running. Flights at 2:00 am were not well received by our neighbors. That problem will continue for any overnight cargo carrier desiring to use ILG. Given the public relations problems associated with air cargo, we will need to be very careful in courting air cargo operators - giving preference to those with day-time only operations.

Development Potential for Airport Land

Non-aviation revenues can be generated through the development of airport property for specified purposes. In this regard, a total of about 18 acres of non-aeronautical, undeveloped airport property was identified for potential commercial/industrial development. The land could be targeted toward aviation-compatible businesses and could work synergistically with the existing land use in the area.

Conditions in New Castle County, Delaware are good for the development of commercial and industrial property. Commercial properties in the Philadelphia MSA are anticipated to gain value as unmet spending demand is countered with new retail development in the form of small strip malls and big box store outlets. In 2005, there was a 25 percent gap between disposable income and retail sales volume in the metro area.² Developed commercial property near New Castle Airport leases for roughly \$15.00 - \$18.00 per square foot, per year while Class A office space in Wilmington averages over \$20 per square foot. Industrial land near highway interchanges should trade for over \$135,000 per acre. Industrial warehouse facilities lease for \$3.75-\$4.00 per square foot per year.³ For airport land that cannot be used for aviation purposes, development for compatible business use is a viable option to increase airport revenues.

5.2 New Castle Airport SWOT

An inventory of New Castle Airport's Strengths, Weaknesses, Opportunities, and Threats (SWOT) is presented in this section.

Strengths

New Castle Airport strengths include the following:

- **Capture of Based Aircraft:** New Castle Airport has exceeded the typical capture rate for based aircraft for an airport of its size. In particular, New Castle Airport has the largest number of based jets in the Philadelphia metro area.
- **Airport Facilities:** Among the non-commercial general aviation airports, New Castle has the longest and widest runway in the service area (7,181 feet by 150 feet). Philadelphia International, Northeast Philadelphia, Chester County, and New Castle have the only precision instrument approaches in the service area.

² Source: www.cdre.com. Total retail sales of \$86.6 billion versus \$29.6 billion in unmet consumer spending demand.

³ Source: www.cdre.com

- **Potential for Airline Service:** New Castle Airport is the only airport in the region without sustained airline service that has the potential to accommodate new airline service. As an FAR Part 139 certificated airport, our potential to attract airline service is second to none.
- **Broad Revenue Base:** New Castle Airport enjoys a broad revenue base which includes numerous tenants and operators.

Weaknesses

There are a number of weaknesses facing New Castle Airport. Some of these are controllable by the DRBA and some are not. Weaknesses identified in this analysis include the following:

- **Market Weaknesses:** On the surface, it would appear that there is not sufficient market demand to support services at ILG for airline passenger service, air cargo operations, or high-end FBOs such as Signature Flight, Million Air, etc.
- **Secondary Market:** ILG is at the mercy of other market forces moving in PHL and BWI. We do not control our own destiny, since changes in the larger markets critically influence our market. ILG's airline market is profoundly influenced by decisions at PHL, including their embrace of Southwest Airlines. We can only react to their decisions in most cases. Until the market demand overwhelms their capacity (PHL and BWI), our ability to attract and keep airline and cargo service is tied to events in these other markets.
- **Branding:** ILG has no identity as an airline or cargo market. In fact, our name does not help to identify where we are located to most people outside our region. If we are serious about attracting certain types of activity at ILG, a concerted and funded effort will have to be made to brand the airport for that activity. The Wilmington - New Castle Airport can also be confused with other Wilmington airports with similar three letter identifiers; Wilmington, NC (ILM), and Wilmington, OH (ILN). One has scheduled airline service and the other is a significant cargo hub.
- **FBO Service:** ILG has not fared as well in realizing its share of *transient* activity driven as a factor of FBO service quality and fuel price. Our trend over the past four years has either remained constant or declined. Perhaps more than any other, the fuel trends represents the most accurate indication of airport health and growth. Because we cannot attract a significant share of transient activity New Castle Airport is not the *airport of choice*, but rather the *airport of necessity*. That is, we only capture what must come here rather than those operators who have a choice of airports. Table - shows our overall numbers in fuel and aircraft operations.

Year	Jet A	100LL	Total Fuel	Operations
2002	5,173,280	176,127	5,349,407	133,098
2003	5,263,079	148,630	5,411,709	118,425
2004	4,950,723	111,417	5,062,140	118,216
2005	5,032,374	112,263	5,144,637	133,711
2006	4,931,592	93,310	5,024,902	136,154

Opportunities

There are a number of perceived opportunities available to New Castle Airport. These include the following:

- **Future Airline Service:** At some point in the future, PHL will reach its capacity, where delays are not tolerable to a number of passengers. This group will seek alternative airports for commercial air travel. ILG must position itself as the southern Philadelphia alternative (Lehigh Valley is the northern alternative). Forecasts of demand show that this occurrence is inevitable. Therefore, it is simply a matter of time before our airline opportunity becomes available. Branding the airport as an airline facility will be needed if the choice to pursue commercial service is made.
- **Future Air Cargo Service:** The same can be said about air cargo service as was said about airline service. Demand in the region will soon overwhelm existing infrastructure. New Castle Airport has a choice in whether or not to pursue this opportunity, weighing the negative public relations (night time noise) against potential revenue gains.
- **Improved FBO Service:** As part of its overall marketing effort, DRBA should work with its existing FBOs to position the airport to attract a greater share of transient activity. At other airports, FBO's and airport management work together in attempting to market the facility to itinerant corporate and fractional jet aircraft owners.
- **Vacant Property Development:** There are currently 3 acres of non-aeronautical airport property sitting undeveloped, and a 38 acre aviation parcel outside the fence. If developed properly, this land has the ability to generate a significant income for the airport (except that land owned in fee simple by DRBA).
- **Hangar Development:** We have not exhausted our hangar development potential. As the corporate aviation market continues to grow in the metro area, ILG will be a desired location for these based aircraft. We have estimated an additional 58 jets to be located at ILG by the year 2025. Those jets will require hangar space, or they will be turned away to other airports in the region.

Threats

There are a number of potential threats to the business expansion of New Castle Airport. These threats include, but are not limited to the following:

- **Environmental:** Airports are increasingly the target of environmental protection actions. That is, noise, wetlands, cultural resources, and other environmental categories have been used to slow or stop aviation projects in the region. There is a vocal minority in the area that would like to stop all development at the airport. Environmentalism is the tool that they use to achieve their goal. ILG must be careful in proposing projects that do not tip the environmental scales in a negative direction.
- **Airspace:** ILG is part of the Philadelphia terminal airspace system. Again, our fate is not in our own hands. Actions at PHL and throughout the Northeast Corridor impact our ability to serve our clients. Delays (particularly if they are increasing) getting into the national airspace system (NAS) will negatively impact demand at ILG.
- **Surface Access:** To effectively serve Wilmington and the surrounding area, users of our airport will need convenient ground access to the facility. This may mean high-speed rail from the downtown area, bus service, or better on-airport access. In the future, as traffic increases, delays getting to the airport diminish its value as a time saver for business travelers.
- **Limits on Financing:** There may be future threats to the expansion of business at ILG that result from an inability to fund needed capital projects. This inability may be in the form of reduced FAA funding, or it could come from DRBA policy on the use of cash vs. public, tax exempt debt financing. Whatever the form, limited funding capabilities will limit future growth at the airport.

6. BASE FINANCIAL OUTLOOK

This section identifies historical revenues and expenses attributable to New Castle Airport and projects those revenues and expenses to the year 2012. This projection only considers a baseline scenario with no revenue enhancement projects included. In other words, what are the financial implications of continuing the airport's operation as it is today? In a later section, alternative projections of financial performance will be developed based upon suggested improvements and marketing pro-formas.

6.1 Historical Revenues and Expenses

DRBA took over the operation and control of New Castle Airport on July 1, 1995. Since that time, the Airport has been the focus of economic development activities, significant capital improvement investments, and corporate aviation expansion. For this analysis, historical revenues and expenses were examined for a six year period (2001-2006). Figure 1 shows total revenues and expenses for the period. It should be noted that capital expenditures are not included in the listing of operating revenues and expenses.

Operating income from the Airport declined until 2006. This total does not include the annual debt service for capital development. Those contributions are not considered revenues from operations by this analysis. Rather, this analysis is geared to identify the actual revenue producing ability of the Airport, along with its actual operating costs. Lease revenues - primarily from on-airport businesses and corporate aviation clients - provide roughly four-fifths of the revenues for the Airport. Fuel fee income is second with almost 14 percent, with landing fees making up the third significant fraction of revenues (4 percent). The primary operating expense category at New Castle Airport is labor, representing 73 percent of operating costs. The next closest operating cost is utilities expense with 13 percent.

6.2 Baseline Forecast of Revenues & Expenses

This baseline forecast presents a status quo look at revenues and expenses, influenced primarily by historical activity. It does not consider all of the potential changes in the Wilmington area economy or at the Airport that might change the historical trend. However, it is important to see the forecast results of what could be called a minimal change alternative, where only the programs that are currently underway and mandatory contractual changes are shown. The FAA's Terminal Area Forecasts were used for the projection of based aircraft and operations at the Airport, showing modest growth through the year 2020.



Figure 1 - Historical Revenues & Expenses

The Baseline Operating Revenue Projection was tied to the growth of based aircraft and operations along with lease escalations. In this regard, the FAA's Terminal Area Forecast (TAF) was used to project based aircraft and operations through the year 2012. That projection showed

an two percent growth in based aircraft and a 9.5 percent growth in operations. All lease agreements have an inflation index built into the contract. For this analysis, inflation was assumed at three percent per year. Thus, lease agreement revenues were optimistically assumed to grow at the rate of inflation plus the growth in based aircraft. Landing fees and fuel sales were tied to operations while the other smaller categories were assumed to grow at the rate of inflation.

Expenses are somewhat different from revenues in that they can more easily increase as a result of price inflation. For example, the cost of labor, the cost of utilities including fuel, and the cost of materials and supplies are subject to price inflation that is beyond the control of the local airport. For this reason, the baseline expense forecast included a 4.0 percent inflation factor for spending over the five year projection period. For labor spending, a lower, 3.0 percent inflation factor was used, since employee turnover and part-time staff usage can insulate this category from full price inflationary effects. Operating expenses do not include capital expenditures, depreciation expense, or grants from governmental agencies. Rather, operating expenses are those costs associated with the day-to-day operation of the Airport. By comparing operational revenues and expenses, a true gauge for the need of supplemental income or grants can be developed.

When the baseline operational costs are compared with the baseline forecasts of operational revenues (not including administrative expenses), the net operating costs for the airport can be predicted as follows:

		<u>Operating Expenses</u>	<u>Operating Revenues</u>	<u>Net Operating Revenues</u>
•	2008	\$4,081,704	\$4,799,106	\$717,402
•	2009	\$4,265,381	\$4,943,079	\$677,698
•	2010	\$4,457,323	\$5,091,372	\$634,049
•	2011	\$4,657,902	\$5,244,113	\$586,211
•	2012	\$4,867,508	\$5,401,436	\$533,928

As shown, net operating revenues are projected to decline from \$717,402 in 2008 to \$533,928 by the end of the forecast period. The results of the baseline forecast also indicate that net operating revenues should be available to fund significant portions of the local share of capital development projects at the Airport.

6.3 Economic Impact Assessment

New Castle Airport (ILG) is located 4 miles south of Wilmington in an industrial, commercial, and residential area. The Airport is operated by Delaware River & Bay Authority (DRBA). The 1,250 acre Airport has three runways, twelve taxiways, and several aircraft parking ramps. The runways include:

- 7,181 foot by 150 foot asphalt surface runway (9/27)
- 7,012 foot by 150 foot asphalt surface runway (1/19)
- 4,603 foot by 150 foot asphalt surface runway (14/32)

The availability and length of the longest runways are sufficient to accommodate the largest business jet aircraft in the nation's fleet. As a result, a number of Fortune 500 companies, including Boeing, Campbell's Soup, DuPont, Citicorp, and W.L. Gore are based at the Airport. In all, there are 66 business jets that are located on the Airport. Other aircraft types located at the facility include 167 single engine aircraft, 24 twin engine aircraft, 16 rotorcraft, and 9 military aircraft.

New Castle Airport remains today as the only public airport in Delaware with an FAA Part 139 Operating Certificate, an air traffic control tower, and a precision instrument landing system (ILS). The Airport now has four full service FBOs: AeroTaxi, Atlantic-Wilmington, Dassault Falcon Jet, and Aeroways, Inc. Combined, these providers offer 72 T-Hangars and 30 aircraft tie down spaces and allow the DRBA to offer one of the largest and most complete general aviation service airports on the east coast. The airport has 75 tenants ranging from major corporate clients to individual aircraft owners. Some of the on-airport businesses are not aviation related and thus were not included in our estimates of employment, income, and dollar output. Major employers on the airport include Fixed Base Operators, Flight Safety International (a pilot and mechanic simulator training facility), and the Army and Air National Guards. Other large employers include the corporate flight departments of the Fortune 500 companies based at the Airport.

For the future, the DRBA is charged with a mission of economic development. Therefore, it can be anticipated that enhancement of airline service will be a priority. In addition, new corporate facilities will continue to be constructed to accommodate business and corporate aviation. As is true of all large airports, some needed facility capital maintenance will occur as the Airport runway infrastructure is improved. The economic impact of the Airport includes direct and induced components of output, employment and income. Table 6 presents a summary of each of these components of economic impact for New Castle Airport.

Table 6 - Direct and Induced Economic Impacts: New Castle Airport	
Item	Total Current Impacts
Direct Impacts	
Airport Related Income*	\$66,859,600
Airport Related Expenditures (Total including capital costs)	\$200,062,700
Airport Related Employment (Total including capital development)	1,817
Induced Impacts**	
Induced from Direct Spending	\$72,048,300
Total Induced Employment Impact	644
Estimated State/Local Taxes	\$8,805,800
Grand Total Dollar Impacts	\$272,111,000
Grand Total Income Impacts*	\$92,908,500
Grand Total Employment Impacts	2,461

* Includes indirect incomes from visitor spending and capital development. This is a subset of the total impacts and is already included in the output number.

** Source: IMPLAN Software - Developed originally by the US Forest Service, it is a comprehensive impact system built on the framework of input-output and social accounting methodology.

7. BUSINESS ALTERNATIVES

Several business plan alternatives were developed to explore a variety of methods designed to better invest capital expenditures at New Castle Airport, increase net revenues, and provide a balanced plan for growth. Business alternatives examined in the analysis included a status quo or low forecast scenario and an action set of alternatives, collectively called the high forecast scenario. The action alternatives examined the Opportunities (the O from SWOT) and constructed potential scenarios around those items. It could be postulated that a medium forecast could occur if various portions of the high forecast did not reach the projected potential. However, for ease of understanding and presentation, only two scenarios are presented here. Each of the scenarios are described in the following sections.

7.1 Scenario A - Low Forecast

The low forecast of aviation use for New Castle Airport assumes that the existing growth scenario and current business posture will remain in place for at least the next five years. This scenario further assumes that the near-term growth in based aircraft operations, itinerant operations, and fuel sales will occur organically. Specifically, the low forecast scenario projects that both the MBNA and Hercules hangars will be rented within the first two years of the period and that other increases in based aircraft will grow as it has in the past. No airline passenger traffic is projected as a part of this scenario. At this low level growth, significant business investments will be borne by the private sector, with the DRBA continuing its use of federal dollars to maintain and provide upgrades to the physical airport infrastructure.

Scenario A is synonymous with the baseline forecast of revenues. That forecast projected a net revenue total of \$533,928 by the year 2012.

7.2 Scenario B - High Forecast

The high forecast examines each of the various Opportunities listed in the SWOT and projects possible activity associated with those actions. Scenarios associated with these opportunities include the following:

- Future Airline Service
- Future Air Cargo Service
- Improved FBO Service
- Hangar Development
- Vacant Property Development

Other alternatives for investment may arise in the future, but these are the most practical for ILG.

Future Airline Service

As mentioned previously, there may come a point in the future where PHL will reach its ultimate operational capacity. Excessive delays to some segment of passengers will not be tolerated. This group will seek alternative airports for commercial air travel. ILG must position itself as the southern Philadelphia alternative (Lehigh Valley is the northern alternative).

Forecasts of demand show that this occurrence is inevitable. Therefore, it is simply a matter of time before our airline opportunity becomes available.

The commercial service market for ILG has been estimated previously using three estimates of local demand. These estimates included one for the total service area and two for the probable immediate demand that could be captured with; 1) good local service using large jet aircraft service and, 2) for regional jet aircraft (50-seat or less) only.

	Annual Enplanements
• New Castle County total passenger potential:	801,000
• Large jet aircraft market capture potential:	290,900
• Regional jet aircraft market capture potential:	87,300

These numbers are based on the *average* performance of other cities across the United States. Actual performance at ILG could be either higher or lower than these averages.

A previous business plan estimated the impacts of large jet aircraft market potential, assuming a low fare carrier were to serve the market. The impact on revenues for the year 2011 was \$3.28 million annually, not including entitlements. Assuming that airline service was to occur in a much lower capacity, revenues could be assumed to drop in similar proportion. In this regard, this business plan assumes that only 30 percent of the large jet market capture potential will be realized (regional jet aircraft market) during the 5 year planning horizon. A reduction of 70 percent of the high revenue projections yields a combined \$985,600 from this source. This does not include the annual FAA Primary Airport Entitlement grant minimum of \$1.0 million for capital improvements.

For the long term, the larger potential for airline service should be considered. This would involve the entrant of a low-cost carrier such as Jet Blue or Skybus to the service area in order to compete with the low-cost services offered by Southwest and AirTran at Philadelphia and Baltimore. This option was investigated and assessed in the Business Plan being prepared for New Castle Airport by DelDOT as part of the state's continuous aviation system planning effort. The draft of this study prepared in December of 2005 concludes that such an airline could capture up to about 290,000 passengers annually using jet aircraft with at least 100 seats or more. Such service could start as early as 2008 and involve up to four flights per day using the 100 seat EMB 190 aircraft, assuming an 84% load factor. By 2011, this may increase to nine flights per day using the same aircraft. The air service scenario identified in the 2005 Business Plan was used in this high growth forecast to assess the impact on the airport existing facilities should such service be established at New Castle.

Future Air Cargo Service

Some have suggested that New Castle Airport could increase activity by actively courting air cargo companies. This idea gained some credibility when the Air National Guard ramp looked as though it may be available for other use as a result of the preliminary BRAC recommendations. However, since there was no ultimate change in the mission of the ANG, the space needed for air cargo operations is limited. In this regard, a minimal operation requires 20,000 square feet of warehousing or hangar sorting space, along with requisite loading and

unloading ramp area. Revenue from such a carrier would likely be limited to landing fees and space rentals. If the cargo company constructed its own building, DRBA would be limited to collecting land rentals - not a significant source of income. This is particularly true when weighing the cost of air cargo service. That cost involves the dollars needed for physical improvements to the airport, but it also involves the negative public relations associated with night-time noise. Noise sensitive areas around the Airport may be impacted by overnight cargo operations, if they were to locate at ILG. Thus, the tradeoff between air cargo operation revenues and local citizen support would have to be considered prior to seeking an air cargo carrier. Depending upon the type of cargo operation, the number of daily flights, the size of the aircraft, etc., landing fees of up to \$500,000 annually could be anticipated.

Improved Capture of Transient Aircraft Operations

As mentioned previously, ILG has not fared as well in realizing its share of *transient* activity driven as a factor of FBO service quality and fuel price. Our summary trends in this area has either remained constant or declined in the past four years. Perhaps more than any other, the fuel trends numbers represents the most accurate indication of airport health and growth. Because the airport fails to attract a more significant share of transient activity, New Castle Airport cannot be considered to be the Delaware Valley *airport of choice, but rather is viewed as the airport of necessity*. That is, ILG only captures that activity which must land at ILG, rather than accommodate those operators who have a choice of airports in the region.

If desired, DRBA management can begin discussions with its existing FBO customers to gauge their level of interest in pursuing and attracting a larger share of transient corporate and general aviation aircraft activity. Each FBO should be offered the opportunity to define an investment strategy to assist in the Authority's overall goal of enhancing its share of this market. As an inducement, DRBA could offer incentives or discounts on the development of first-class lounge facilities or the paving of additional aircraft apron as part of the effort.

If the effort to attract additional investment from any on-airport FBO fails to materialize, DRBA would be free to solicit new FBO services from nationally-known FBO's through an RFP process. These FBO's would essentially bring their own market to ILG by adding ILG to their national chain of customer locations. A list of potential FBOs of this quality would include: Signature Flight, Million Air, Hawthorne, Wilson Air, Sheltair Aviation, TACAir, Cutter Aviation, etc. Any member of this high-end list of FBOs would perform well at ILG. However, some combination of competitive forces within the FBO industry could prevent a new FBO from moving in to an airport where another large FBO was already established (Atlantic).

In any event, potential lease revenues from an additional major FBO could yield as much as \$500,000 annually, depending upon the terms of the lease. Key to a decision to seek an additional FBO would be information as to how much it may cost to provide facilities for the operation, how much existing business would simply be transferred from one FBO to another, and how much new business would be generated. The RFP process could establish many of these parameters.

Hangar Development

As the corporate aviation market continues to grow in the Philadelphia metro area, ILG will be a desired location for these based aircraft. We have estimated an additional 58 jets to be located at ILG by the year 2025. Of those, 16 will be available to base at ILG by the year 2011. Those jets will require hangar space, or they will be turned away to other airports in the region. The Airport Layout Plan shows space for the development of 17 new large corporate hangars. While this will more than accommodate the demand over the next five years, based aircraft demand in the out-years may require additional land at the airport.

There are a number of options facing DRBA in the development of these hangars:

- **DRBA Construction:** One option would be for DRBA to construct the hangars and lease them to prospective tenants. This method is recommended if DRBA has secured a long term lease from a prospective tenant. The lease will effectively pay the debt service. When the debt is retired, DRBA collects market rents from the facility to help underwrite its other activities at the airport. A side benefit of this method is that DRBA controls the lease and makes a significant return on investment. One downside is the possible vacancy of the hangar, which does not keep debt service payments from accruing.
- **Land Lease:** A second option is for DRBA to seek private investment to construct hangars on leased land. DRBA only collects a small amount on the land and must wait at least 20 years to take the property back using either a reversion clause in the lease agreement or lease language that limits the ultimate number of terms of lease renewal.

There are other options such as condominium hangar developers and other third party developer options, but those should not be considered unless there are no willing tenants and no capital funds available to DRBA to develop their own hangars.

Return on investment for the hangar facilities should average between 10 and 15 percent of the debt service on the hangar itself. For example, if hangar debt service is \$120,000 annually, land rents should be priced at between \$12,000 and \$18,000 per year. Even if DRBA constructs the hangars, it will likely only earn the 10 to 15 percent margin over the debt service during the life of the loan or bond issue.

Vacant Property Development

There are currently 3 acres of non-aeronautical airport property and an additional 38 acre aviation parcel outside the fence that is undeveloped at present. If developed properly, this land has the ability to generate additional income for the airport. Commercial real estate developers could be used for projects like this. DRBA does not have to get into the commercial real estate business, but can delegate that activity to professionals in the field. Over the long term, these properties could make a substantial contribution to the economic well being of the Airport.

Conditions in New Castle County, Delaware are good for the development of commercial and industrial property. Commercial properties in the Philadelphia MSA are anticipated to gain value as unmet spending demand is countered with new retail development in the form of small

strip malls and big box store outlets. In 2005, there was a 25 percent gap between disposable income and retail sales volume in the metro area.⁴ Developed commercial property near New Castle Airport leases for roughly \$15.00 - \$18.00 per square foot, per year while Class A office space in Wilmington averages \$20 per square foot. Industrial land near highway interchanges should trade for over \$135,000 per acre. Industrial warehouse facilities lease for \$3.75-\$4.00 per square foot per year.⁵ For airport land that cannot be used for aviation purposes, development for compatible business use is a viable option to increase airport revenues.

7.3 Summary of Scenario B - High Forecast

Potential revenues streaming from the five categories examined in this analysis were estimated as follows:

- **Future Airline Service:** Revenues were estimated to grow slowly over the period reaching \$985,000 by the year 2012. This does not include the annual minimum \$1.0 million in Primary Airport Entitlement funding from the FAA.
- **Future Air Cargo Service:** If a cargo carrier was attracted to ILG, it was estimated that landing fees could reach \$500,000 by the year 2012. This assumes a location could be found for development of a minimum 20,000 square foot warehouse/hangar facility and that local objections to aircraft noise could be overcome.
- **Improved FBO Service:** The attraction of a high-end FBO or new investment by an existing one could yield as much as \$500,000 in lease and percent-of-gross payments each year. This assumes a location could be found for expansion of such an FBO or that a major FBO operation would be willing to locate an outlet at ILG, given the current competition on the airport.
- **Hangar Development:** The hangar development option assumes that up to 16 additional corporate tenants will be based at ILG by the year 2012. Margins from hangar development rentals/leases or margins over debt service could total between \$1.6 million and \$2.4 million by the year 2012.
- **Vacant Property Development:** With an approximate total of 18 acres available for development, it was estimated that annual lease/rental revenues to DRBA could total \$186,000 annually starting in 2008 based on a negotiated value of approximately \$154,000 per acre (\$502,035 by 2012).

Added together, the revenue potential associated with the High Forecast totaled \$4,087,035 by 2012. This includes a number of the operational costs, but does not incorporate the DRBA share of capital development costs associated with a new airline terminal, a cargo facility, and a new FBO facility. Debt service to the airport on those items would extend past the year 2012, and it is unknown what the exact cost would be on an annual basis. It was assumed that the Primary Airport Entitlement or the Passenger Facility (PFC) program would help pay for the debt service on the terminal building. Subtracting the costs from the revenues, a margin of \$1,123,935 could be expected if all of the activities were undertaken.

⁴ Source: www.cdre.com. Total retail sales of \$86.6 billion versus \$29.6 billion in unmet consumer spending demand.

⁵Source: www.cdre.com

8. RECOMMENDED PLAN

The Recommended Business Plan for New Castle Airport focuses on the development of a number of initiatives between now and the year 2011. If we do nothing, the status quo scenario will occur by default. New Castle Airport will continue to operate in the black and a relatively safe course of management can be charted. Those not benefitting from Scenario A in our alternatives analysis include air passengers that would prefer to depart from a Delaware airport, ILG general aviation customers desiring excellent FBO service, corporate based jet owners desiring to locate at ILG, and other airports in DRBA's system that would benefit from additional revenues earned at ILG. That Scenario is not recommended in this plan.

Rather, a combination of actions described in Scenario B are recommended. These actions did not examine management structure or other internal DRBA issues. Instead, they focused on deliberate and measurable actions regarding the following initiatives:

- Future Airline Service
- Future Air Cargo Service
- Enhanced FBO Service and Transient Capture Rate
- Hangar Development
- Vacant Property Development

Future Airline Service – Setting the stage

One of the most significant revenue enhancement initiatives offered by this business plan is the eventual capturing of some portion of the scheduled air service market at ILG. Ultimately, this service will be required because PHL will reach its absolute capacity within 20 years. This service would not only be a benefit to local economic development, it would also benefit many Delaware citizens that currently have to leave the State to use airline service. Therefore, the question of “when” and not “if” is appropriate. DRBA management may not be able to jump-start airline service to ILG, but we can certainly take actions that will position the airport to receive this service when conditions at PHL dictate that alternatives are needed. These recommended actions include the following:

- 1) Reservation of property at or near the airport for a new terminal building, access road and auto parking area.*
- 2) Work with DelDOT and New Castle County to plan for ground access to the airport's 38 acre parcel and the eventual truncating of Old Churchman's Road.*
- 3) Continued discussions with any and all airlines that have an interest in ILG. This would include any low cost carrier not currently in the Philadelphia market.*
- 4) Development of a new, regionally-focused airport marketing/branding program that has value across all airport lines of business such as corporate and commercial activity. It should also help distinguish the various Wilmington airports with air service.*
- 5) Apply for a Small Community Air Service Development Grants - One for a feasibility study and another for marketing and/or startup subsidy.*

If a serious airline partner is found, DRBA needs to be in a position to identify, plan and invest in a new terminal site and support facilities. This will require a commitment of the airline to a long term agreement in order to support a tax-exempt bond issue or other debt instrument.

A new branding effort needs to take place immediately at the airport. Branding is the process of developing a unique selling identity for a product or service. New Castle Airport has not yet overcome its general aviation/corporate identity. New Castle Airport must transform itself from a general aviation image into an airline service airport with a multi-state service area. The first step in this process is a name change for the Airport, properly identifying its regional significance. Generally, a name change provides the opportunity to introduce new services, a new look, and a revitalized marketing campaign. Names such as "Northern Delaware Regional" or "Delaware Valley Regional" could be considered. Discussions should be held with the airline partner(s) to determine market targets and how to cooperatively work toward attracting these to the Airport.

One strategy would be to apply for funding from the Small Community Air Service Development Program (SCASDP) to market the airline service. A modest budget could be used to advertise and market the airline service to raise awareness of its convenience and cost. The SCASDP program has been very popular with small communities and has been used to help startup airline service, market airline service, perform airline feasibility studies, and reduce the leakage of passengers to other cities with airline service. Spring of 2008 would be the earliest opportunity to apply for a SCASDP grant.

Finally, if airline service is desired, the community and the DRBA needs to formulate support for the service early-on with commitments shown in terms of marketing dollars and political support. DRBA cannot function as an objective bystander. We must commit to the development of this service one way or another, and it must be public. Thus, we must actually believe in the product.

Future Air Cargo Service

There have been recommendations over the years that ILG attract an air cargo carrier such as FedEx, UPS, or DHL. These and other smaller air cargo operators haul freight and overnight cargo for both priority and non-priority packages. For just-in-time inventories, air freight is sometimes used. This occurred at ILG some years ago when supply chains were crippled by a rail strike. The GM plant near Wilmington shipped car doors from Dayton directly to ILG for use in keeping the production line running. These shipments sometimes occurred after midnight, creating noise-related complaints from neighbors. Unfortunately, late-night operations and air cargo go together. As such, there is a high public relations price to pay for such service. DRBA is in the best position to judge whether or not the noise compatibility issue is significant enough to eliminate consideration of air cargo service.

In addition to noise issues, there are significant facility considerations. That is, a large air cargo operation needs ground facilities for handling, sorting, and transitioning the cargo to ground or air mode. Those facility options may have existed if the Air National Guard facility was available for other development. However, that option is not in play and it would be

difficult to locate such a facility on the Airport in addition to a new passenger terminal area. Therefore, a tentative recommendation for air cargo can be made:

- 1) If a day-time air cargo carrier can be found that desires to use ILG, we will work with that carrier to develop landside facilities and ramp.**
- 2) If night-time air cargo carrier service is a significant portion of the air cargo operation, DRBA must decide what public relations price can be paid in return for the landing and rental fees from the carrier.**

Given these factors, there is little optimism to support an air cargo operation at ILG. If an air cargo carrier is found, its operation will have to conform to the conditions imposed by DRBA. However, due the DRBA's federal grant requirements, the Authority may be required to accommodate a cargo operator determined to exit another congested airport. For this reason, we have included the revenue associated with this potential operation.

Enhanced FBO Service

Already, Dassault-Falcon Jet (DFJ), Atlantic-Wilmington, Aeroways, Inc., Aero-Taxi and other aviation-related businesses provide services at New Castle Airport. These companies employ significant numbers of trained workers and provide incomes to local families. If desired, ILG can pursue other high-end FBOs that will attract a greater share of transient corporate and general aviation operators. Many of these new FBOs have their own markets among corporate and fractional jet aircraft owners. They would essentially bring their own market to ILG. A list of potential FBOs of this quality would include: Signature Flight, Million Air, Hawthorne, Wilson Air, Sheltair Aviation, TACAir, Cutter Aviation, etc. Any member of this high-end list of FBOs would perform well at ILG. However, there may be some unwritten code between these FBOs that would prevent them from moving in to an airport where another large FBO was already established.

Recommendations for seeking an additional FBO include:

- 1) Ensure that there are available locations or property on the airport for expansion of the existing or new FBO's.**
- 2) Hold discussions with management of existing FBOs to gauge their potential interest in expansion and participation in the enhanced marketing effort for ILG.**
- 3) If no efforts are realized from Step #2, develop a specific Request For Proposal that sets minimum requirements for a potential new FBO. Distribute this RFP to a select list of FBOs.**

Again, this is a market-driven process that DRBA cannot control. Rather, we can only make ourselves available should these market forces work to our advantage. The RFP process and negotiation are the only methods that we can use to measure the current supply of FBO services to our airport.

As mentioned, potential lease revenues from an additional major FBO could yield as much as \$500,000 annually, depending upon the terms of the lease. Key to a decision to seek an additional FBO would be information as to how much it may cost to provide facilities for the

operation, how much existing business would simply be transferred from one FBO to another, and how much new business would be generated. The RFP process could establish many of these parameters.

Hangar Development

Most airport sponsors have learned that corporate aviation helps “pay the bills” by providing a disproportionately higher source of airport revenue than recreational general aviation. Several factors have combined to make New Castle Airport the logical location for corporate aviation expansion. First, the Airport’s two 7,000+ foot runways are the longest at any public-use airport in Delaware. Second, the Airport is located within the greater Philadelphia area. Corporate aviation interests using North Philadelphia or Philadelphia International could be well served at New Castle Airport.

Key to the attraction of corporate aviation to ILG is the provision of adequate corporate hangar space. The ILG ALP shows locations for the development of corporate hangars. Funding for the development of these hangars is a significant issue. In this regard, several creative methods have been employed by airport sponsors to develop hangar facilities using both public and private investment. For public investment, Federal grants or low-interest bond issues are preferred sources of funds. Grants from Airport entitlement funding provide a maximum \$150,000 per year which can only fund a portion of the hangar needs. Unfortunately, there is no guarantee that grants will be available when needed for hangar development. Therefore, the debt financing method must be retained as a second option for DRBA. Recommendations for hangar development at ILG include the following:

- 1) *DRBA should attract corporate aviation through marketing programs.*
- 2) *To serve corporate aviation, DRBA should develop hangar facilities. Up to 16 large hangars may be needed within a five year period.*
- 3) *Financing of hangar facilities should either be with DRBA money or through private sources of funding.*
- 4) *For DRBA financing, FAA grants are preferred, however, debt financing is also a good method.*
- 5) *For private financing, DRBA should issue RFPs to determine if there is a market for such activity. Often, the success of private financing is based upon the negotiated terms of the agreement between the sponsor and the private developer.*

If DRBA desires to encourage private investment in hangars at the Airport, there are several options. First is the straight land lease, where land is leased to a private investor (at a very nominal rate), who develops a hangar facility on that land. Usually, 20 years or longer are permitted with such a lease to allow the investor to recoup the useful life out of the hangar investment. Many such leases have reversion clauses that transfer ownership of the hangar to the Airport Sponsor after the term of the lease. The Sponsor then has the ability to charge market prices and use the money from the hangars to support Airport operations.

Another creative method of encouraging private investment in aircraft hangars provides for immediate ownership of hangars by the public sponsor. A long-term flat lease (20 years or more) permits the developer to get full value of the investment back prior to reversion to airport

sponsor use. Since the airport sponsor owns the hangar, at the end of the lease, it can operate the facility and charge market rents and receive a steady stream of revenue from that time forward. In the long term, revenue streams from the hangars will revert to the Authority, strengthening its financial performance and long-term viability.

Another method of encouraging private hangar development is to seek aircraft hangar condominium developers that would be willing to lease land on the Airport for such development. Generally, these leases are very long (up to 40 years), and aircraft hangars can be bought and sold by their owners similar to residential condominium ownership. The cost of these hangars often ends up much higher than rental units, since there are monthly “maintenance” fees in addition to mortgage payments. Often, a market study must be completed by the developer to determine whether or not sufficient demand exists in the area to support these higher priced facilities. At high-demand airports where condominium hangars have been developed, the financial return to the Airport sponsor has been good. With the current cost and price structure at New Castle Airport, condominium developments with this type of yield may be possible.

Vacant Property Development

There are currently 3 acres of non-aeronautical airport property and a 38 acre aviation parcel outside the fence that is undeveloped. A portion of the 38 acres (say 15 acres) could be released from aeronautical use and used for compatible industrial development. Developed properly, that land has the ability to generate a significant income for the airport. Commercial real estate developers can be used for projects like this. That is, the DRBA doesn’t have to get into the commercial real estate business, but can delegate that activity to professionals in the field. Over the long term, these properties could make a substantial contribution to the economic well being of the Airport.

- 1) DRBA should confirm non-aeronautical property functions prior to its release. For those areas that will never be used for aviation purposes, a release should be secured from FAA.*
- 2) Released properties should be developed preferably by lease so that future revenue streams feed the airport operations.*
- 3) Studies and/or contracts with commercial real estate brokers are needed to determine the market value of non-aeronautical airport property and the best methods of development.*

Financial Impacts of Recommended Plan

The recommended plan has a financial impact on the Airport’s revenues and expenses. This report does not include the level of detail that would be available from a more specific financial analysis. Therefore, only broad estimates are given here. To examine detailed financial performance, a significant effort that attaches costs to each of the specific facility development recommendations will be required.

The financial implications of implementing all of the recommended items in the plan include the following:

From these total revenues increases, the costs of providing facilities and services to accommodate those activities must be accounted. In this regard, it was estimated that on an annual basis, roughly \$1,000,000 in costs would be needed for debt service on an FBO hangar and air cargo facility (assume \$10 million in capital costs at 8 percent interest over 20 years). Taking the net revenues from all activities, an additional \$ 1,123,935 million could be added to current revenues.