

AIRPORT ACQUISITION FEASIBILITY STUDY



of the
Sussex Airport,
New Jersey



QED

Airport & Aviation Consultants

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Chapter 1

INTRODUCTION

PURPOSE AND OBJECTIVES

The Sussex Airport has been in the same private ownership since 1951 and was initially constructed in 1944 at its present site in the Township of Wantage. The current owner has been seeking to sell the Airport so that he might retire from the daily affairs of facility management and operation. The Sussex Airport is included in the Federal Aviation Administration (FAA) National Plan of Integrated Airport Systems (NPIAS) as a designated general aviation reliever airport, and is identified as a core airport in fulfilling the objectives of the New Jersey State Airport System Plan. In the past, the Airport may and has applied for and received federal and state grant funding for eligible capital improvements. This past funding establishes the Airport as "federally-obligated", and because the Airport has received such funding for land acquisition and capital improvements, it must remain in operation in perpetuity in accordance with current regulations and policies of the FAA. Sale of the Airport may be made to private or public entities that wish to assume operation and management responsibilities, each of which carries differing outcomes on the extent of operating revenues and expenses that might accrue to the Township of Wantage. The Airport is obligated in accordance with the Sponsors Grant Assurances that were made a part of federal grants and with current federal regulations.

The Township of Wantage prudently offered to sponsor a study to determine the potential for its acquisition of the Airport and received a 100 percent grant from the New Jersey Division of Aeronautics for this purpose. This initiative is the first step toward a systematic investigation of the technical, environmental and economic viability of public ownership of the Airport, and supports the State of New Jersey in its mission of preserving and improving its core system of airports. This study is intended to investigate this potential and seeks to identify several key factors that may affect a determination as to the appropriateness of public ownership of the Sussex Airport by the Township of Wantage. Primary study elements include:

1. The economic viability of the Airport and its economic contribution to the local community.
2. The physical condition of the Airport and its ability to be improved to meet federal and state facility design standards, consistent with environmental regulations.
3. The means by which the Airport is to be operated and managed.
4. Components of a business plan that would encourage private investment in Airport facilities as well as create synergies with local economic generators.

This study is presented in a format that emphasizes understanding by readers who are not necessarily versed in the jargon of the airport and aviation industry. The study scope follows some of the content that might be found in a traditional airport master plan or airport layout plan report. However, emphasis is placed on presenting information that supports decision making with respect to the technical, environmental, economic and financial viability associated with public acquisition of the Airport.



This report addresses the existing conditions and constraints at the Airport, assesses the market conditions to support the continued demand for general aviation services, identifies primary facility requirements and establishment costs to accommodate future levels of aircraft activity, evaluates the financial impacts associated with the possible public acquisition and alternative forms of management and operation of the Airport, presents an economic impact analysis and closes with recommendations for future activities.

A primary purpose of this report is to facilitate a decision by the Township of Wantage as to whether to continue its due diligence efforts on the Airport issue or terminate its consideration of the matter. Should the Township elect to continue, these efforts are proposed to be funded by a subsequent grant from the New Jersey Department of Transportation and possibly the Federal Aviation Administration. The grant(s) would enable more detailed environmental investigations, a title search, conduct of independent land and improvement appraisals, preparation of the set of airport layout plan drawings and airport capital improvement plan, and other activities as considered appropriate and required to facilitate a second "go/no-go" decision by the Township of Wantage. A decision by the Township of Wantage to proceed would then initiate a potential third round of grant funding to address those processes necessary to solicit and review proposals from the private sector as applicable to third-party capital investments to implement portions of the planned Airport improvement program not eligible for federal or state grant funding, and/or the type of daily management and operation of the Airport that is favored by the Township of Wantage. All future grant funding for any of the above phases from the New Jersey Department of Transportation and/or Federal Aviation Administration would be subject to funding availability and evaluation of the grant application(s) at the time of filing.

The report has been the subject of meetings with the designated members of the advisory committee and an open meeting of the Governing Body of the Township of Wantage. The members of the advisory committee are listed in alphabetical order in the section below, and their efforts are hereby recognized. Representatives of the Federal Aviation Administration and New Jersey Department of Transportation, Division of Aeronautics also met with the advisory committee and provided input during the conduct of this study.

Advisory Committee Members

Angelo Cilarotto, representing the Township of Wantage Land Use Board
Bill DeBoer, representing the First Aid Squad and Township of Wantage Governing Body
James Doherty, Township of Wantage Administrator
Tom Madsen, representing the Sussex County Chamber of Commerce
Chris Vander Groef, representing the Township of Wantage Fire Department
Greg Williams, representing the Recreation Commission
Hal Wirths, representing Sussex County Government

Chapter 2 CONDITIONS ANALYSIS

EXISTING FACILITIES

Airport facilities in the Sussex, New Jersey area were initially realized in 1929 when the Sussex-Martin Airport was established for public-use. That airport was operational until a new airport was constructed in 1944 at the current 96-acre site of the Sussex Airport. The Sussex Airport has been in continuous private ownership, initially by five individuals and in 1951 solely by the current owner, Mr. Paul Styger. The Airport was constructed with two turf runways and the

Figure 2-1 Existing Airport
April 2009



terminal area was also sod. In 1966, Runway 3-21 was paved to its current length as was a small apron area and the parallel taxiway was overlaid with gravel. The taxiway was eventually paved for its entire length in 1976. The Airport has been improved over time with runway edge lighting, visual lighting systems, and terminal area facilities. An automated surface observation system that monitors and broadcasts pertinent real-time aviation meteorological data is also located on the Airport. An operating agreement provides off-Airport aircraft hangared in privately-owned facilities located east of the Runway 3 threshold access to the airfield area. An aerial view of the Airport taken in and its immediate environs is presented in Figure 2-1.

Table 2-1 on the following page presents a summary of the existing facilities at the Airport and an assessment of their general condition and ability to be improved or rehabilitated (serviceability). The table updates information presented in the 1997 Airport Layout Plan Study prepared for the New Jersey Division of Aeronautics. The useful remaining life of structures on the Airport has not been specifically determined and is dependent on the investment made in maintenance activity and weather impacts. It is likely that all the aboveground improvements with the exception of the hangar owned by Custom Air Charters will need to be replaced within the near-term. All paved aircraft operational areas (runway, taxiway, apron tiedowns) are in need of rehabilitative overlays during the next five years, particularly the northern portion of the parallel taxiway. The hardstands and turf tiedown areas at the north end of the Airport are subject to flooding and ponding and should be improved with appropriate drainage facilities and full paved surfaces. Construction of a partial parallel taxiway at the south end of the Airport was initiated and remains unusable at present.

**Table 2-1
EXISTING PRINCIPAL AIRPORT FACILITIES**

Airfield Area	Description	General Condition
Runway 3-21	3,499' x 75' (paved)	Fair, with substantial cracking; serviceable
Runway Lighting	Medium intensity – Pilot controlled (122.7)	Good; serviceable
Runway Pavement Strength	Not available	Not applicable
Taxiway	Partial parallel north to Runway 3 departure and displaced thresholds. Partial parallel section south to the Runway 21 departure end was initiated but is not complete.	Poor, requires reconstruction
Taxiway Lighting	Medium intensity	Good; serviceable
Terminal Navigational Aids	None	Not applicable
Visual Landing Aids	Precision approach path indicator (PAPI-2) – Pilot controlled (122.7)	Good; serviceable
	Runway end identifier lights (REILS) – Pilot controlled (122.7); Runway 3 and Runway 21	RW 3 – Out of service RW 21 -- Good; serviceable
	Rotating beacon	Good; serviceable
	Lighted wind tee	Good; serviceable
Communications	CTAF/Unicom (122.7)	Good; serviceable
Weather	ASOS (owned by FAA)	Excellent; serviceable
Terminal Area		
Administration Building / Tower	660 sf (2 stories)	Poor; not serviceable
Based and Transient Aprons	Paved (13,000 s.y.)	Good to fair; serviceable
	Hardstands and turf (110 spaces)	Poor; some areas subject to flooding
T-Hangars	1, single-unit	Poor; not serviceable
	6 bays	Poor; not serviceable
	48 off- Airport units in 3 structures (When Pigs Fly, LLC)	Very good; serviceable
Conventional Hangars	Maintenance Hangar / Welding Shop (10,550 sf) (2 stories)	Poor; not serviceable
	Custom Air Charters (55' x 60')	Good; serviceable
	Quonset (45' x 60') and support buildings	Poor; not serviceable
	Three Crown Avionics (40' x 90')	Poor; not serviceable
Modular Offices	Blue Max Aviation (10' x 35')	Fair; serviceable
	Skydive Sussex (10' x 45') and fabric-covered work area	Good; serviceable
Aviation Fuel	1, 10,000-gallon underground tank for low lead avgas; self-serve fuel pump	Good; serviceable
	1, 10,000-gallon underground tank for Jet-A fuel; self-serve fuel pump	Good; serviceable
Automobile Parking	50 paved spaces	Good to fair; serviceable

SPECIAL AVIATION ACTIVITY

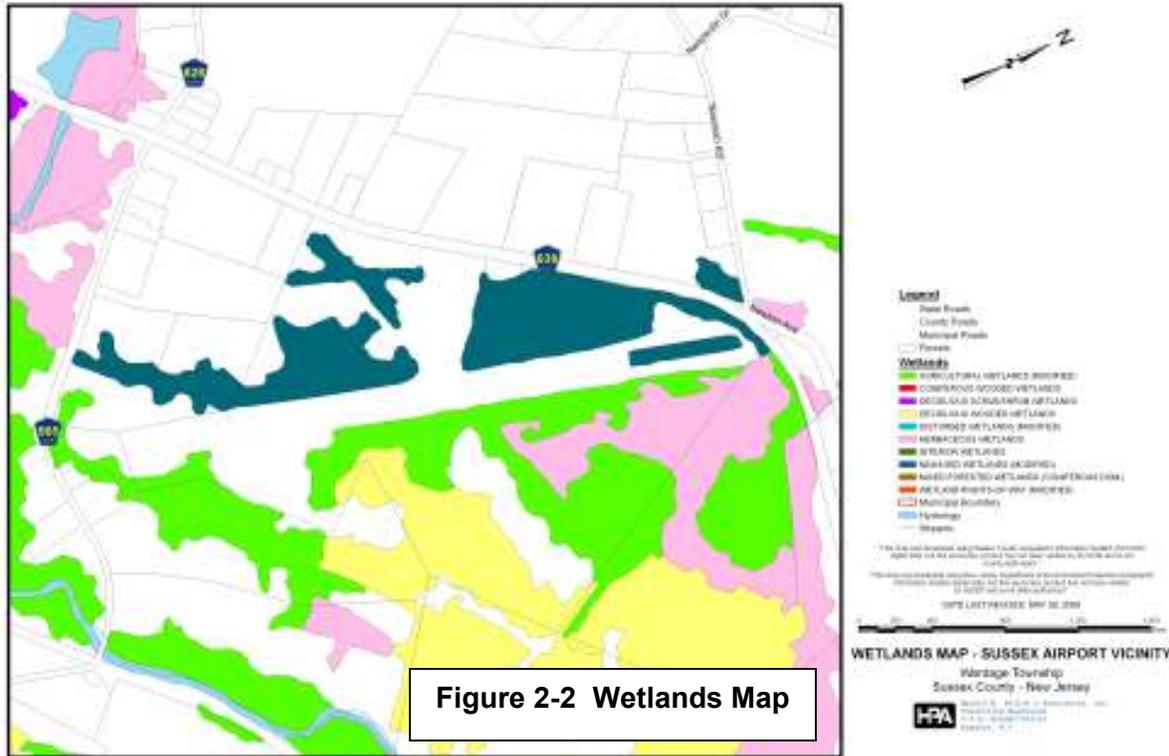
Many small, general aviation airports across the country host air shows where a few local area aviators demonstrate their skills and the performance capabilities of their aircraft in displays of fast, low level, and stunt maneuvers, and aircraft and classic automobiles are put on static display. Sussex Airport was no different in this regard, except that the annual Sussex Air Show attracted national and award-winning pilot/aircraft combinations from across the country. Dubbed the "Biggest Little Air Show in the East", crowd attendance reached into the 20 thousand range and generated revenue to the air show operator, local area hotels, restaurants and



businesses, and likely stimulated positive interest in general aviation. One of the reasons for the success of the annual Sussex Air Show, which began in 1966 and was held nearly continuously until 2004, was the early involvement of Leo Loudenslager, the famed pilot and aerobatic champion who based his aircraft at Sussex Airport until his untimely death in a motorcycle accident in 1997. His professional relationships with world-class air show pilots helped contribute to bring them to Sussex and the positive public response ensured that the Sussex Air Show would continue on the national air show circuit schedule. It may be possible to revive the Sussex Air Show in the future and recapture those days that brought out the sense of aviation excitement to audiences young and old alike.

ENVIRONMENTAL SETTING

The Airport is located west and beyond the boundary of the Highlands Region as defined in the Highlands Water Protection & Planning Act. Undeveloped portions of the Airport property contain areas that are designated as containing several types of wetlands as illustrated in Figure 3-3 on the following page based on infrared aerial imaging interpretation obtained from the New Jersey Department of Environmental Protection. It is apparent that there is a distinction in the types of wetlands east and west of the runway as noted in the legend in Figure 3-3, which can be inferred as the straight white area running diagonally across the image. The managed wetlands (modified) area that is shown at the north end of the runway is the turf between the physical end of the runway and the displaced Runway 21 threshold and the parallel taxiway. The land mass now occupied by the Airport may have at one time contained a type or mix of wetlands. Construction of the runway (1966), taxiways (1976) and terminal area facilities on the west side prior to establishment of wetland protection regulations (Clean Water Act in 1972 and amendments in 1977 and 1987) likely changed the hydrology of the site on the east and west sides resulting in the wetland types depicted and use of the terms "managed" and "modified" in current terminology. Areas to the east of the runway are labeled agricultural wetlands (modified), herbaceous wetlands, and deciduous wetlands. Such designations suggest that development of these areas for Airport facilities should be avoided. Conversely, the term managed wetlands (modified) for the areas west of the runway suggest that these wetlands were managed and modified for other purposes (airfield pavement and terminal facilities) and may continue to be developed subject to state and local environmental permitting regulations, as was applicable for the construction of the south parallel taxiway. Should these areas be abandoned, it is possible that they would revert over time to their former wetland status. Development of these wetland areas for airport purposes should follow best management practices to include appropriate engineering drainage design. This will minimize potential impacts on those wetland areas east and west of the runway that are to remain undeveloped.



Further, these wetlands are not under the jurisdiction of the U.S. Army Corps of Engineers as provided for in Section 404 of the Clean Water Act. Discussions with the Corps indicated that since 1994 their jurisdiction in this area of New Jersey extends only to navigable waterways, which is the Delaware River. Therefore, wetland issues are under the purview of the New Jersey Department of Environmental Protection (NJDEP.) A records search conducted by the NJDEP revealed that a major flood hazard permit was issued in 2007 in order to allow the construction of the south parallel taxiway. Consequently, it appears that future development of the Airport, especially on the west side of the runway, should be capable of implementation after the filing of pertinent impact assessment reports. No records of wetland delineation studies were found by the NJDEP; however, any delineation is valid only for a five-year period.

It is noted that the wetland mapping shown in Figure 3-3 and its source document is to be used as a planning tool. Further studies to assess the soils, vegetation and hydrology should be pursued prior to developing any areas on the Airport. This wetland investigation or delineation study will enable a determination by the NJDEP as to whether these are jurisdictional wetlands. Such a determination would be formally presented in the Department's Letter of Interpretation.

The Airport is located within an Airport Hazard District defined in the zoning regulations and map of the Township of Wantage. Land uses permitted in the Airport Hazard District include, in addition to an airport and the conduct of air shows, industrial, highway-commercial, open space and agricultural. Additionally, the Airport Hazard District prescribes height restriction regulations within defined areas that are consistent with state laws and federal aviation regulations. These local regulations are appropriate for the aircraft fleet mix operating at the Airport on a regular basis. The Airport Hazard District also identifies specific new land uses that are prohibited, such as residential, hospitals, bulk tank fuel storage, landfills and other attractants of birds, and above grade utility transmission lines.

Surrounding land uses are compatible with current Airport operations. Residential areas are located primarily to the northeast and to a lesser density to the southeast. The left-turn Airport traffic pattern for landings on Runway 21 end overlies the residential area to the northeast; however, aircraft noise levels have not been an issue with local residents. Land areas to the west of the Airport are also in compatible commercial and industrial use.

DEVELOPMENT CONSTRAINTS

Aside from the environmental setting in which the Airport is located, there are other physical features that may constrain development of airfield and terminal area facilities. Loomis Avenue (CR 639), Newton Avenue and power lines to the north potentially limit extension of the runway. Although these constraints can possibly be eliminated, treed terrain at high elevations immediately to the northeast effectively precludes extension of the runway to the north based on airspace considerations. CR 565 to the south also restricts extension of the runway unless these ground travel routes can be relocated and land acquired. The residence located north of CR 565 and south of the end of Runway 3 is leased to the occupant by the Airport owner under a life tenancy and can be demolished at a future date.

PAST GRANT FUNDING AND ASSOCIATED OBLIGATIONS

The Airport is federally-obligated, which means that its owner has received federal grant funds for capital improvements or land or aviation easement acquisition. Table 2-2 on the following page provides the available record of past federal and state aviation grants. Acceptance of federal grant funds requires the Airport to meet federal design standards when undertaking new capital projects and taking responsible action to meet these standards with respect to existing facilities. Additionally, the airport sponsor must comply with applicable safety and compliance requirements as specified in the grant assurances that accompany the receipt of grant funds. Federal grant funds used for capital improvements and planning projects at privately-owned airports are valid for 10 years or the life of the airport, whichever is longer. This is one of many grant assurances that accompany the award of a federal grant. When federal grant funds are used for land or aviation easement acquisition, as was the case in 1998 and 2005 at Sussex Airport, the airport remains obligated in perpetuity and this condition extends to subsequent owners of the facility. The Airport has also received grant funds for improvements from the State of New Jersey; however, there are no associated state design standards that apply. The State requires that airports meet applicable federal design standards and has similar grant assurances as required through federal grants.

It is important to note that a federal regulation addressing revenue diversion applies to obligated airports such as Sussex Airport. Revenue diversion regulations were enacted to ensure that all revenue generated by an airport is used for airport improvements and operations. No revenue may be used to pay for activities or services that are provided by non-airport entities. The revenue diversion regulation also extends to the sale of an airport, whether privately- or publicly-owned. All proceeds from the sale of an obligated airport, if it was ever to be permitted by the FAA, are deemed as airport revenue to the owner. As such, these revenues must remain on the airport and cannot be taken as income or a return on investment by the airport owner. Such sales proceeds must be used to pay off airport debts and other costs associated with the sale of the airport, and for future airport capital investments and operating expenses.

Year	Project	Funding Participation (\$)			
		Federal	State	Owner	Total
1988	Survey / Design / Apron Rehabilitation	0	153,000	17,000	170,000
1995	Runway Rehabilitation	510,300	28,350	28,350	567,000
1996	Airport Drainage	145,000	16,000	16,000	177,000
1998	Land Acquisition	80,000	5,000	5,000	90,000
2005	Install MIRL, REILS, PAPI-2	190,000	5,000	5,000	200,000
2005	Land Acquisition	108,000	6,000	6,000	120,000
2005	Obstruction - Bury Power Lines	0	5,218	0	5,218
2005	Construct Parallel Taxiway	999,954	55,553	55,553	1,111,060
2006	New Fuel Pumps, Re-mark Runway	0	140,500	16,000	156,500
Total		2,033,254	414,621	148,903	2,596,778

Source: New Jersey Department of Transportation

AIRPORT DESIGN STANDARDS COMPLIANCE

It is customary to assign an airport reference code (ARC) as defined by the Federal Aviation Administration (FAA) when designing an airport. The ARC is defined by the approach speed, designated by a letter, and the wing span and tail height, designated by a Roman numeral, of the critical aircraft. The latter is determined as that aircraft generating at least 500 annual aircraft operations (takeoffs and landings.) The higher the letter the faster the aircraft, the higher the numeral, the larger the wing span and tail height. Table 2-3 presents the aircraft performance and dimensional standards that are used to define the ARC in accordance with FAA Advisory Circular 150/5300-13, Airport Design. Occasional operations by larger aircraft and/or those with higher approach speeds for any given ARC is acceptable, provided that their frequency of use does not escalate to being considered the critical aircraft. An upgrade to the approach speed of the aircraft may result in an increase in airport design standards. An advance in wing span or tail height will generally result in a major increase in the applicable airport design standards.

Aircraft Approach Category	Aircraft Approach Speed (knots)	Airplane Design Group	Wing Span (feet)	Tail Height (feet)
A	< 91	I	< 49	< 20
B	≥ 91 and < 121	II	≥ 49 and < 79	≥ 20 and < 30
C	≥ 121 and < 141	III	≥ 79 and < 118	≥ 30 and < 45
D	≥ 141 and < 166	IV	≥ 118 and < 171	≥ 45 and < 60
E	≥ 166	V	≥ 171 and < 214	≥ 60 and < 66
		VI	≥ 214	≥ 66

Because this study is intended to assess the feasibility of the Township of Wantage assuming ownership and operation responsibility for the Airport, it would be prudent to assess how well the existing facilities meet a range airport design standards. Accordingly, the following ARC designations were evaluated:

- B-I – this is the ARC depicted on the current Airport Layout Plan for existing and future conditions. Photo at right is a Piper Cheyenne.



- B-I SAE – this is the same ARC but narrowed to include only small aircraft exclusively (SAE). Small aircraft are defined by the FAA are those with maximum gross takeoff weights of 12,500 pounds or less and essentially addresses nearly all general aviation piston and turboprop aircraft and very light business jets. Photo at left is a Cessna Caravan.

- B-II – this classification serves to include nearly all general aviation aircraft including a wide range of business jets. Photo at right is a Cessna Citation III.



- C-II – this ARC is applied when the Airport is intended to serve the full range of active business jet aircraft. Photo at left is a Grumman Gulfstream III.

Although the Airport Layout Plan presents the ARC as B-I, it is the opinion of QED that the B-I SAE ARC is a more appropriate design standard for current aircraft operations and Airport use, primarily due to the length of the runway available and the physical characteristics of aircraft that it accommodates on a regular basis. Higher level ARCs may be applicable in the future and can be determined through assessments of potential activity

demand levels by aircraft type, actual type aircraft usage, and the feasibility of achieving the associated facility design standards.

Visibility minimums associated with instrument approach procedures to the Airport also influence airport design standards associated with an ARC. For the purposes of this analysis, visibility minimums of not lower than $\frac{3}{4}$ -mile have been utilized. In order to achieve visibility minimums of less than $\frac{3}{4}$ -mile, the runway end must be equipped with an approach lighting system. Current visibility minimums associated with the RNAV (GPS) LNAV approach procedure to Runway 3 are as low as 1 statute mile. A circling approach designed utilizing the Sparta VORTAC, a terminal navigational aid located about 8.6 nautical miles southeast of the Airport, permits approaches to either Runway 3 or Runway 21. The approach minimums (ceiling and visibility) for the circling approach are nearly equivalent to those for the RNAV (GPS) LNAV 3 approach.

Runway length requirements were based on the FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design. The guidance was interpreted to utilize the grouping of small airplanes representing 95 percent of the fleet as applicable to the B-I SAE and B-I ARCs. Increasing the percentage of the small aircraft fleet to 100 percent represents the B-II ARC, which also includes small turbine-powered aircraft. The C-II ARC represents general aviation aircraft carrying 10 or more passengers excluding the pilot and co-pilot. The required runway lengths for these ARCs are presented in Table 2-4 on the following page and are based on FAA advisory circular data. Obstacles in the approaches to Runway 3 and Runway 21 require displacements to the landing threshold of 457' and 750', respectively to meet threshold siting standards. This reduces the runway length available for landing as shown in Table 2-4.

A comparison the existing Airport layout with key design standards for each ARC noted above is also presented in Table 2-4. The data indicates that the Airport is deficient with respect to most airport design standards including those associated with the lowest ARC classification evaluated (B-I SAE). Deficiencies within the B-I SAE ARC are color-highlighted in red font. The dimensional data for the existing condition is based on measurements of the minimum distances that would be evaluated to satisfy a particular design standard. For example, the length of the runway safety area at each runway end is limited by the distance to the end of the Airport property. These same dimensions also apply to the length of other airport design standards that consider distances available from the end of a runway. Satisfaction of those design standards associated with lateral clearances (width) can be met through relocation and new construction of facilities, especially where these are in less than satisfactory condition. This would apply to the runway safety area, runway obstacle free zone, runway object free area, and runway to parallel taxiway separation. Those deficiencies with respect to length of applicable design standards will likely require acquisition of off-Airport land areas and the relocation of runway thresholds, primarily that for the Runway 21 end. The latter modifications to the layout of the Airport airfield facilities may result in an increased runway length for aircraft landings.

The lack of compliance noted in Table 2-4 suggests that new ownership of the Airport will necessitate a major federal, state and local investment in improvements to meet applicable airport design standards. The current shares of such investments for eligible projects are 95 percent, 2.5 percent and 2.5 percent, respectively. Therefore, the local public agency investment is heavily leveraged with federal funding provided through the collection of national aviation system user fees and taxes administered by the FAA and retained in a trust fund.

**Table 2-4
AIRPORT COMPLIANCE WITH SELECTED DESIGN STANDARDS**

Design Standard	Existing	Airport Reference Code (ARC)			
		B-I SAE	B-I	B-II	C-II
Runway wind coverage (percent)	84	95	95	95	95
Runway length	3,499	3,100	3,100	3,650	4,150
Landing Runway 3	3,042	3,100	3,100	3,650	4,150
Landing Runway 21	2,749	3,100	3,100	3,650	4,150
Runway width	75	60	60	75	100
Runway safety area					
Width	250	120	120	150	500
Length prior to landing threshold (3 / 21 Existing)	240 / 240	240	240	300	600
Length beyond runway end (3 / 21 Existing)	240 / 60	240	240	300	1,000
Runway obstacle free zone					
Width	210	250	250	250	400
Length	240 / 60	200	200	200	200
Runway object free area					
Width	210	250	400	500	800
Length beyond runway end (3 / 21 Existing)	240 / 10	240	240	300	1,000
Runway to parallel taxiway lateral separation (north partial / south partial under construction)	131 / 150	150	225	240	300
Runway to aircraft parking area	170	125	200	250	400
Taxiway width	18 (avg)	25	25	35	35
Taxiway safety area width	80	49	49	79	79
Taxiway object free area width	80	89	131	131	131
Taxilane object free area width	40	79	79	115	115
Runway protection zone					
Inner width (3 / 21 Existing)	Off Airport Property (3 / 21)	250	500	500	500
Outer width (3 / 21 Existing)	Off Airport Property (3 / 21)	450	700	700	1,010
Length (3 / 21 Existing)	Off Airport Property (3 / 21)	1,000	1,010	1,010	1,700
New Jersey runway subzone					
Width (3 / 21 Existing)	2,350	2,350	2,350	2,350	2,350
Length (3 / 21 Existing)	3,499	3,499	3,499	3,499	3,499
New Jersey runway end subzone					
Inner width (3 / 21 Existing)	2,350 / 2,350	2,350	2,350	2,350	2,350
Outer width (3 / 21 Existing)	Off Airport Property (3 / 21)	850	850	850	850
Length (3 / 21 Existing)	50 / 55	3,000	3,000	3,000	3,000
New Jersey clear zone					
Inner width (3 / 21 Existing)	250 / 250	250	250	250	250
Outer width (3 / 21 Existing)	Off Airport Property (3 / 21)	450	450	450	450
Length (3 / 21 Existing)	220 / 115	1,000	1,000	1,000	1,000

Notes: 1. Items highlighted in red font do not meet ARC B-I SAE design standards.
2. Runway length is not a design standard and the data presented is for information only.

FACILITY AND SERVICE OBJECTIVES

The State Airport System Plan specifies a series of facility and service objectives consistent with the functional role assigned to each airport. Sussex Airport is assigned to a general service functional role for current and future time frames. The facility and service objectives for these roles are indicated in Table 2-5, together with an assessment as to the extent to which the Airport currently meets these criteria. The comparison indicates that the Airport meets the service objectives associated with the General Service functional role, but lacks certain facility capabilities.

Criterion	General Service Functional Role	Assessment
Airport Reference Code	B-I or greater	Does not meet most B-I standards
Runway length	3500' minimum	Meets standard for takeoff but not for landing
Runway width	To meet ARC	Meets standard
Taxiway	Full parallel, partial parallel, connectors or turnarounds	Has parallel TW but does not meet lateral separation at north end; south end is under construction.
NAVAIDS	Nonprecision approach	RNAV (GPS) LNAV 3
VISAIDS	Rotating beacon, lighted wind cone/segmented circle, REILS, VGSI	Lacks VGSI on Runway 21. REILS on Runway 3 are out of service.
Lighting	MIRL, taxiway lights/reflectors	Runway has MIRL; TW not lighted; no reflectors
Weather	Not required	ASOS operational
Services	Phone, restrooms, fuel (avgas)	Terminal building lacks restrooms
Facilities	Paved apron, storage units, public building area	Facilities available in varying degrees of condition

AIRSPACE SETTING AND INSTRUMENT PROCEDURES

Sussex Airport is located within Class E airspace with a floor of 700' above ground level to 18,000' above mean sea level. Within Class E airspace, aircraft operations may be conducted under visual flight rules (VFR), special VFR (SVFR) and instrument flight rules (IFR.) When operating under IFR and SVFR, aircraft are separated from each other and subject to air traffic control clearance. VFR flights are not subject to air traffic control, but offered traffic advisory services when controller workload permits. Additionally, the Airport is located approximately seven nautical miles northwest of the outer perimeter of the Mode C veil centered on the New York Metropolitan area air carrier airports. Aircraft operating within the Mode C veil are required to be equipped with a Mode C transponder that transmits altitude information to air traffic controllers when interrogated by air surveillance radar. Normally, aircraft operating to and from Sussex Airport will not be impacted by this requirement unless they are approaching from or destined to areas to the southeast. Aircraft utilizing the Sparta VORTAC, which is the final approach fix for the VOR-A procedure to the Airport as well as the holding fix in the event of a missed approach as well as the initial approach fix for the RNAV (GPS) LNAV 3 procedure, will

require a Mode C transponder inasmuch as the facility is located within the Mode C coverage area. (Refer to Figure 3-1, Area Competing Airports, on page 3-4 for an illustration of the airspace environment of the Sussex Airport.)

The nearest airports to Sussex Airport are Aeroflex-Andover, Greenwood Lake and Newton airports, each approximately 13 nautical miles to the southwest, east and southwest respectively. This distance affords an acceptable separation between aircraft operations at these airports. Air traffic destined to or originating from or destined to high activity level airports in the New York-New Jersey metropolitan area does not present an airspace use conflict with flight activity at Sussex Airport.

The FAA has recently proposed to modify the design of the Class B airspace that is also centered on the New York Metropolitan area air carrier airports and generally is that airspace between the surface and 10,000' above. Most Class B airspace resembles an upside down wedding cake and has differing volume sectors between specified altitudes. The proposal provides for an expansion of the radii forming the airspace from 20 nm to 25 nm, expanding the airspace in a northwest quadrant, and lowering the elevations associated within certain sectors. Aircraft operations within Class B airspace require clearances from air traffic control to enter as well as operate within the airspace whether flights are conducted under visual or instrument flight rule regulations. Once a pilot obtains an air traffic control clearance, they receive separation services from other aircraft within the airspace. These changes will not affect air traffic activity at Sussex Airport. However, pilots of aircraft based at airports located within the proposed Class B airspace may opt to avoid such communication requirements and relocate to other facilities. The final status of the proposed change to the Class B airspace has not been determined and public hearings and other processes must be followed in order to reach a conclusion.

Visual flight rule aircraft operations at Sussex are flown within a traffic pattern that provides for left hand traffic to each runway end. The traffic pattern altitude is 1200' AMSL. This follows standard procedures for uncontrolled airports and is well known to all pilots, whether based at the Airport or transient. An RNAV (GPS) LNAV instrument approach procedure utilizing satellite-based navigation is published for Runway 3. Nighttime approach capability is afforded through pilot-controlled radio operation. Approach minimums for the RNAV (GPS) LNAV 3 are



880'-1¼ for approach category B aircraft, which are relatively high for this type of procedure. A circling approach, which is a visual procedure allowing landings on either runway end, is available and based on the Sparta VORTAC some 8.6 nautical miles southeast of the Airport. The approach minimums associated with the VOR-A procedure are nearly equivalent (879'-1¼) for approach category B aircraft. There is merit in evaluating the feasibility of establishing a new instrument approach procedure to an RNAV (GPS) LPV capability to Runway 3. Terrain to the

northeast of the Airport effectively precludes a satisfactory approach procedure to Runway 21. The RNAV (GPS) LPV procedure does not require a capital investment for on-ground navigation facilities. The LPV approach offers vertical as well as lateral navigational guidance, a capability

avored by corporate aircraft and most general aviation pilots. Aircraft need to be equipped with the requisite avionics to use these procedures and pilots that typically fly such approaches have or are upgrading their aircraft to achieve this operational capability. The Airport will need to comply with facility layout design standards applicable to the achievable minimums in order to obtain an RNAV (GPS) LPV procedure.

CONCLUSIONS

In summary, the Sussex Airport has been accommodating the demand needs of that segment of general aviation that can operate from runways with relatively short lengths. The geometric layout of the Airport airside and terminal area facilities (apron and tiedown areas) is deficient in several instances, but can be corrected as part of a capital improvement program that includes additional land acquisition to provide a clear runway safety area. The extent of on-Airport terminal area facilities appears appropriate for the types of users that are based at or travel to the facility, although their condition will require replacement in the near future. The off-Airport T-hangars offer a high level of service that is not being met by the current Airport owner.

The Airport is operating in a setting that is constrained by physical features that limit the possible extension of the runway. Wetland areas on the Airport should be delineated to determine their boundaries. The more sensitive of these areas appear to be located on the east side of the Airport, which lacks vehicular access and terminal area and taxiway facilities, and thus may not be conducive or required for long-term aviation facilities development. Within these constraints, there appear to be opportunities to increase the number of aircraft that can be accommodated within the existing land resource as reflected in the current airport layout plan.

Chapter 3

MARKET ANALYSIS

INTRODUCTION

Factors that influence the demand for aviation activity at an airport include the socioeconomic characteristics of the air service area, the level of service and facilities provided at the airport versus competing airports in the region, and its location with respect to demand generators for originating or transient users. These are reviewed in this chapter, which serves to offer the likely market demand that could be served at Sussex Airport. The results obtained from telephone interviews with based and transient users of the Airport and area businesses that are known or have the potential to utilize the Airport for air transportation services are also included in the market analysis.

SOCIOECONOMIC SETTING

In April 2009, the Airport served as a base for 137 aircraft, including 43 aircraft that lease space in the off-Airport T-hangars located adjacent to the southeast corner of the Airport. The location of the aircraft owners helps to define the service area for the facility. Aircraft basing reflects consideration of such factors as convenience in terms of access, facilities and services available and operating costs versus those associated with other airports. The Airport draws its based aircraft from owners located in Sussex County (70) and the counties of Morris (11), Passaic (8) and Bergen (5). Aircraft owners located within the Township of Wantage and the Borough of Sussex account for 6 and 19 based aircraft, respectively. Aircraft owners from locations in New York State including Long Island (7) and Pennsylvania (8) also incur the requisite travel distance and time to base their aircraft at the Airport. This data suggests that the Airport attracts aircraft owners from areas located more distant than the typical general aviation airport service area defined as within a 30-minute travel contour. A primary reason for the attraction of owners located more than a two-hour drive from the Airport is strictly economic. Airports located closer to these owners, which are nearer to the New York-New Jersey metropolitan area, typically charge higher fees for aircraft tiedown and storage. In those instances when the aircraft owner is operating less frequently, they typically seek out airports that offer safe storage at the lowest reasonable cost and incur longer commuting distances and times. This type of demand generated by low activity pilots is being accommodated at the Sussex Airport.



Sussex County accounts for about 51 percent of the based aircraft at the Airport. The addition of Morris, Passaic and Bergen counties increases the capture rate to nearly 69 percent and serves to define the airport service area. Inasmuch as Sussex County accounts for the majority of the air service demand market, socioeconomic data for the county was used to represent the characteristics of the service area. It is helpful to compare service area data with comparable measures within larger regions such as the state and the nation. These principal indicators are presented in Table 3-1 on the following page.

Table 3-1 PRINCIPAL AIR SERVICE AREA SOCIOECONOMIC CHARACTERISTICS			
	Air Service Area – Sussex County	State of New Jersey	United States
POPULATION			
2000	144,166	8,414,350	281,421,906
2007	151,478	8,685,920	301,621,157
2011	154,900	8,817,400	313,232,000
2016	160,300	9,065,100	328,678,000
2020	166,100	9,287,000	341,387,000
2025	172,900	9,554,300	357,452,000
Percentage Change			
2000 – 2007	5.1	3.2	7.2
2007 - 2025	14.1	10.0	18.5
EMPLOYMENT			
Industry Sector - 2007	Percent Distribution		
Agriculture	0.2	0.3	1.4
Mining	0.1	0.1	0.5
Construction	7.0	4.4	8.2
Manufacturing	5.1	7.9	11.2
Transportation and Utilities	2.4	4.4	5.3
Wholesale Trade	2.5	5.7	3.0
Retail Trade	14.1	11.8	11.4
Finance, Insurance and Real Estate	3.7	6.7	7.2
Services	44.7	43.2	47.6
Government	20.2	15.5	4.2
INCOME			
	Effective Buying Income (EBI) - 2008		
Median Household EBI (\$)	61,111	52,221	41,792
Households by EBI Group	Percent Distribution		
\$50,000 - \$74,999	25.2	21.1	19.8
\$75,000 - \$99,999	19.2	14.6	11.0
≥ \$100,000	17.6	16.4	9.2

The following may be inferred from the data presented in Table 3-1:

1. Population growth rate in the airport service area has exceeded that in the State and lagged that in the country, and these trends are expected to continue.
2. The economic base of the airport service area is concentrated in the retail trade, services and government sectors comparable to that in New Jersey and the nation. Each economy is dependent on the services sector for the greatest percentage of total employment. It is noted that the services sector includes health care and social assistance activities that appear to be a major component in Sussex County.

3. The median household effective buying income, a measure of disposable income, in the airport service area is substantially higher than that in the state and the country. The percentage of households with effective buying income levels in excess of \$75,000, a level that should provide sufficient funds for discretionary purposes such as air transportation illustrates a similar pattern.

NATIONAL AND STATE PLANS

Sussex Airport is included in the FAA's National Plan of Integrated Airport Systems (NPIAS) as a general aviation reliever airport, which allows eligibility for federal grants for planning, design and implementation of capital improvement projects.

The Airport is also incorporated into the 2007 State Airport System Plan as a core airport fulfilling a general service functional role. Core system airports are to be acquired, preserved, and/or rehabilitated because of their vital importance to the airport system using federal, state and local funds. General service airports are intended to support smaller corporate aircraft, such as twin-engine aircraft, and the operation of general aviation aircraft for business and pleasure. This functional level of



airport is intended to support a variety of uses (business, pleasure and training), while providing the majority of the system's operational and storage capacity for single- and multi-engine piston aircraft. The 2007 State Airport System Plan reviewed the functional service role of the Sussex Airport and recommended that it retain its general service classification. Nonetheless, the advancement of an airport to a higher functional service level can be achieved based on a substantiated and demonstrated need and the ability to meet applicable technical, financial and environmental standards. This is particularly relevant when another airport(s) is targeted for improvement, but whose advancement is considered inappropriate for any number of justifiable reasons. In these instances, another airport whose situation is more suitable for expansion and development may fill that role.

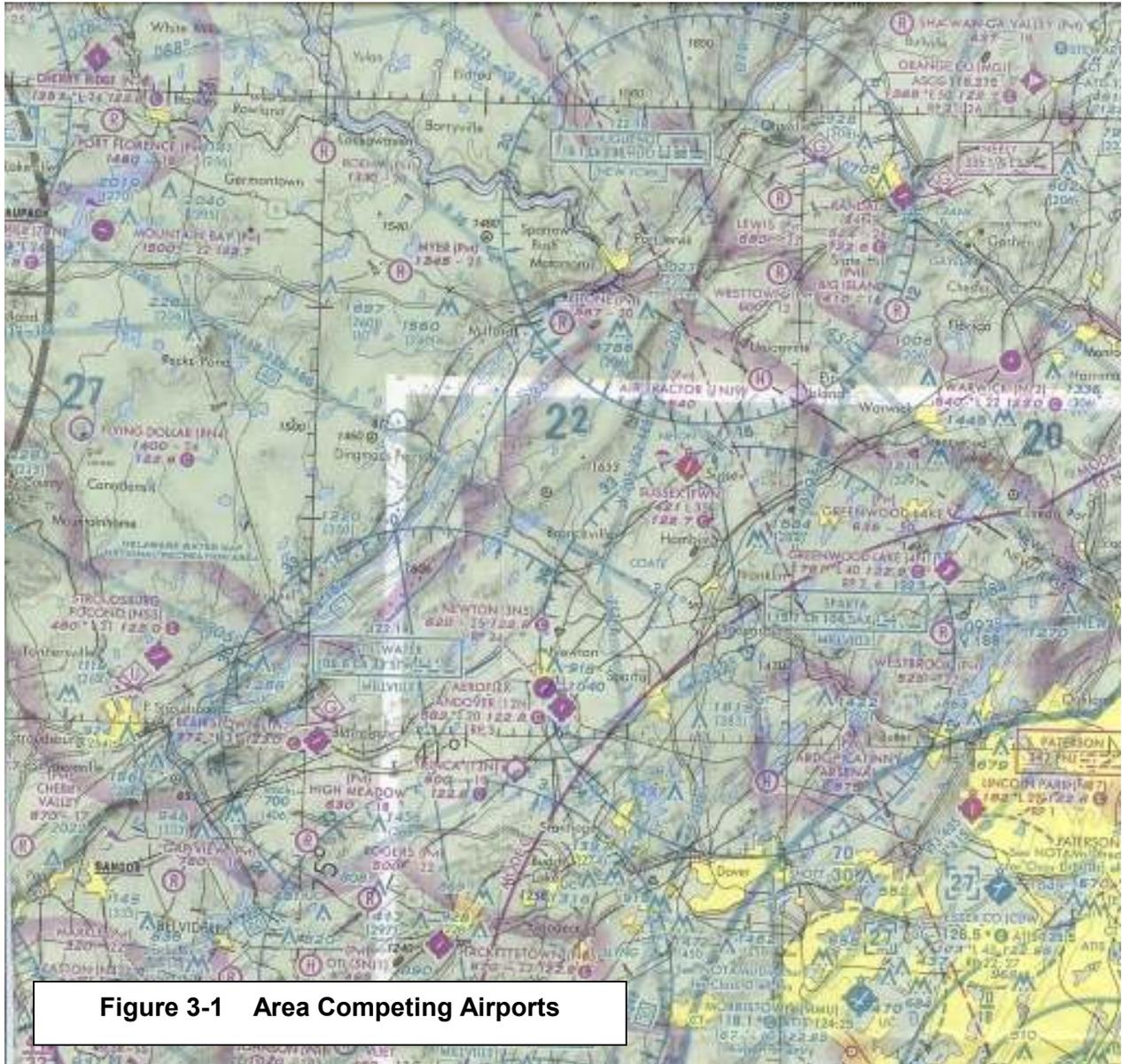
Sussex Airport is also categorized as within the PA4 Metropolitan State Planning Area as designated in the New Jersey State Development and Redevelopment Plan. The PA4 classification designates a Rural Planning Area. With respect to transportation, PA4 is intended to support the preservation of general aviation airports as integral parts of the State's transportation system. Airports located in PA4 areas are emphasized for their preservation as opposed to expansion. Notwithstanding this interpretation, the Plan is presented as a policy guide and not regulation.

COMPETITIVE POSITION

The Sussex Airport competes for based aircraft with other airports located within its service area. Competitive factors such as the physical layout and condition of the airfield and terminal area facilities; availability of tiedown and hangar space; convenience in terms of access, costs, services available; and personal interaction with the fixed base operator(s) and other based aircraft owners influence the aircraft basing decision. Another competitive use factor addresses the attraction of transient aircraft and is dependent on the economic makeup of the airport

service area; location of the airport with respect to the final ground origin or destination in its vicinity; and the facilities, services available and their associated costs.

Figure 3-1 illustrates the service area of the Airport and the location of competing airports. Table 3-2 (2 pages following) presents a summary of the key facilities and services available at these airports, three of which excluding Sussex Airport are located in Sussex County – Aeroflex-Andover, Newton and Trinca.



Insert Table 3-2 page 1

Insert Table 3-2 page 2

The data presented in Table 3-2 allows the following observations:

1. Sussex Airport competes with a total of 11 general aviation airports, one of which is located in New York State and another in Pennsylvania. The remaining airports are in New Jersey. Each of these airports is within or near the service area of the Sussex Airport.
2. Of the 11 competing airports, 4 are privately-owned and the balance are publicly-owned.
3. Although the competing airports include the Essex County and Morristown Municipal airports, these facilities tend to attract relatively higher performance aircraft. Additionally, the costs to base an aircraft at these facilities are comparatively high. Aircraft operating costs tend to increase the closer the airport is located with respect to major population and industry centers such as those within the New York-New Jersey metropolitan area.
4. The Newton and Trinca airports are not available for use on a 24-hour basis and provide relatively few services to based and transient aircraft. These airports primarily function to meet the needs of recreational pilots and are not totally positioned to be competitive with the Sussex Airport without an extensive capital investment including land acquisition. Their assigned duplicative basic functional roles within the New Jersey State Airport System Plan confirm their limited potential.
5. Aeroflex-Andover Airport fulfills its mission to support the New Jersey State Forest Fire Service and a number of based aircraft. Its geographical setting between two lakes and limited land mass restricts its potential to offer improved aircraft operational capability. The Airport is classified in the New Jersey State Airport System Plan to continue to serve in a basic functional role. It competes with Sussex Airport for that pilot base seeking recreational flight operations.
6. Hackettstown Airport is encroached by residential development and has facilities and services that are less than those at other competing airports. The Airport is classified to fulfill a basic functional role, which is not competitive with that assigned to Sussex Airport.
7. Warwick Airport, though publicly-owned, is limited in its use and would require major capital investments in addition to overcoming environmental hurdles in order to be an effective competitor to Sussex Airport.
8. Most of the airports have an unsatisfied demand for aircraft hangar storage, although the true demand varies depending on the monthly fee. Hangar rental fees also vary based on the size of the aircraft and the type of facility.

Based on the above findings, the primary competitors to Sussex Airport are initially narrowed to the Blairstown, Greenwood Lake, Lincoln Park and Stroudsburg-Pocono airports. Of these, the Blairstown, Lincoln Park and Stroudsburg-Pocono airports are considered sufficiently distant from the centroid of the Sussex Airport service area to effectively capture the market for based aircraft. Consequently, a more realistic determination of the competitive airports to Sussex Airport yields the Greenwood Lake Airport. The publicly-owned airports described above and

judged not truly competitive with Sussex Airport are anticipated to remain in operation, thereby, assuming a portion of the Airport's air service market.

The Sussex Airport is comparable with the Greenwood Lake Airport in terms of the facilities and services available. Although Sussex Airport has a slightly longer physical runway length, the threshold displacements at each end reduce the landing length available. The resulting landing runway lengths are, however, adequate to accommodate regular users of the Airport. Neither airport has a runway length that meets typical corporate jet performance and commonly imposed insurance carrier requirements of at least a 5,000-foot runway length. Greenwood Lake Airport is well known to pilots for its strong crosswinds, which can challenge even experienced pilots during the approach to landing. A review of the New Jersey State Airport System Plan indicates that only the Sussex Airport has a record of accommodating business jet aircraft. These aircraft are of the light-weight category given the takeoff and landing runway lengths available and may operate with weight restrictions, especially during the summer months.



Each airport offers tiedown for based and transient aircraft and provides hangar storage capabilities. Although the Greenwood Lake Airport is owned by the New Jersey Department of Transportation, the fixed base operator, Greenwood Lake Airport Management has had plans for the past few years to construct 40 additional T-hangars in the future, increasing the total capacity to 52 hangar spaces. These facilities will be first offered to based pilots who currently position their aircraft in tiedown spaces at this Airport. It is possible that aircraft based at other airports in northwestern New Jersey or along the border with New York State may relocate to Greenwood Lake Airport to take advantage of this aircraft storage capability and the aircraft maintenance services available. Only Sussex Airport offers services that attract specific types of users such as those requiring avionics installation and maintenance, or parachute jumping.



Unlike the other airports, the owner of the Sussex Airport has entered into an agreement with a private party to allow aircraft access to the airfield from T-hangars constructed off-Airport. These attractive facilities are located southeast of the Runway 3 threshold and accessible from County Road 565. A total of 48 T-hangars equipped with bi-fold doors are provided, 43 of which are occupied by aircraft and the remainder are available for rent. This arrangement is commonly referred to the industry as a "through-the-fence" operation

and is acceptable at federally-obligated airports such as the Sussex Airport on a case-by-case basis, provided that the off-airport facilities provider makes equitable compensation to the airport owner and limits activities within those facilities that is comparable to that in effect for on-airport tenants.

Of the competing area airports, only Greenwood Lake is operational at all hours of the day as is the Sussex Airport. Aircraft operations between sunset and sunrise at Aeroflex-Andover require transient pilots to obtain prior approval for arrival from Airport management to ensure that they are fully briefed on the Airport's geographical setting (lakes in the approach to each runway end) and the short runway length.

Sussex Airport has competitive fees for aircraft tiedown, hangar rental and aircraft avgas fuel. It is the only airport offering Jet-A fuel that is required for turbine-powered aircraft. There was a period of about eight months in 2008-2009 during which low-lead avgas, the predominant fuel used by single-engine and multi-engine piston aircraft, was unavailable at the Sussex Airport. This disruption in service likely influenced some aircraft owners to relocate to the Greenwood Lake Airport and other area airports. The start and then stop of the partial south parallel taxiway construction has also contributed to a lower level of service at the Sussex Airport, which may have caused pilots to avoid using the facility as a base of operations.



On an overall comparative basis, Sussex Airport and Greenwood Lake Airport offer equivalent and the relatively highest level of facilities and services than those available at the competing area airports. However, the potential addition of new hangar facilities at Greenwood Lake Airport, its public ownership status, and its location within an hour's drive of Sussex Airport could be sufficient incentive for aircraft owners to transition to this facility provided that they are comfortable operating in the frequent crosswinds that are experienced at this airport. Public ownership and the continued, assured availability of aviation fuel and completion of the southern partial parallel taxiway should enable the Sussex Airport to maintain its competitive position.

AIRPORT USE AND SERVICE ROLE

Sussex Airport is used for both business and pleasure general aviation activity. Approximately 30 of the based aircraft are registered to businesses. One tenant, Custom Air Charters, operates a FAR Part 135 air taxi operation at the Airport utilizing a 8-seat Cessna 421, a twin-engine supercharged piston, pressurized aircraft. Custom Air Charters averages about two or three flights per week and operates on-demand. The company may originate the charter flight at Sussex Airport or transition to another airport to enplane and deplane the charter passengers.

A parachute jump school, Skydive Sussex, has ground facilities at the Airport and leases an area south of its modular offices to nearly the ASOS, west toward CR 639 and east toward the partial parallel taxiway that is used for the drop zone. Parachutists are urged to land as far from the runway and taxiway operating area as practical. During the jump season that runs six days a week from mid-May to mid-October, three aircraft are based at the Airport. The season may extend part-time a few weeks at either end depending on weather and air temperature conditions. The jump planes include a single-engine piston Cessna 182, and a single-engine piston Cessna 206 and a twin-engine turboprop King Air. During the remainder of the year, these aircraft transition to the Cross Keys Airport in south-central New Jersey to operate at their sister company, Freefall Adventures. Jump flights are frequent during the season and each aircraft may average 20 takeoffs (40 aircraft operations) daily.

Although there is a helipad located at the rear of the Borough of Sussex Fire Department immediately north of the Airport along CR 639 and used primarily for the transport of patients or accident victims to and from the St. Clare's Hospital, similar transport activity has occurred at the Airport. Newton Memorial Hospital is equipped with a helipad adjacent to its emergency room. Medical transport requiring the use of fixed-wing aircraft can utilize the Sussex Airport.

Based Aircraft



In the year 2000, the Airport reported a total of about 150 based aircraft. However, the current count numbers 137, which includes 43 aircraft in T-hangars located off-Airport property. Records of the number of aircraft based at the competing area airports since 2000 is sporadic and not necessarily reliable. In general, the numbers of based aircraft have trended downward, although the available data suggests a more positive record at the Greenwood Lake Airport due possibly to its location, public ownership status, condition of facilities and services available.

The declining trend at Sussex Airport may be attributable to a number of factors such as:

- Economic conditions
- Higher fuel prices and aircraft operating expenses
- Sale of aircraft
- Aircraft ownership consolidation (fractional ownership, flying clubs)
- Increasing pilot age
- Lack of hangar space
- Availability of aviation fuel
- Airport management policies and practices
- Condition of airfield and terminal area facilities
- Possible sale of the Airport

The types of aircraft based at Sussex Airport and its competing area facilities are also impacted by the available runway length. Runways less than 3,000' in length may discourage multi-engine piston and turboprop aircraft, and especially jet aircraft, from basing at the airports. The demand for aircraft hangar storage exceeds the available supply; however the potential expansion of these facilities at the Greenwood Lake Airport could bring this into balance for those aircraft owners located within its service area.

Recent discussions with representatives from area airports indicate that the outlook for the number of based aircraft at their facilities is generally level, although it could trend lower in some cases as the cost of general aviation flying increases, especially for pleasure purposes. Conversely, the lack of hangar storage facilities could stimulate the relocation of aircraft to other area airports, such as to Greenwood Lake in the event the 40 additional hangar spaces are realized at this facility. This does not appreciable change the total number of based aircraft on a regional basis, but affects the distribution of those aircraft.

Recent economic slowdowns have resulted in pilots selling their aircraft to others located outside of the Sussex Airport service area. The extent to which the Airport can stimulate the market to regain its share of based aircraft and associated activity is dependent on a number of factors such as the type and condition of the existing facilities; pricing for tiedown and aircraft storage; ownership and longevity status; the range, quality and availability of services; and its competitive position with respect to area airports.



Projections of based aircraft at Sussex Airport and its competing area airports are presented in Table 3-3. These projections include a mix of piston single-engine and multi-engine aircraft, with the exception of the Essex County and Morristown Municipal airports that serve as a base for business jet aircraft. The current number of aircraft based at these airports is also presented to offer a comparison with the projections. These projections suggest low to moderate growth in the number of based aircraft at those airports slated to serve in the basic, general services or general aviation functional roles. The duplicative service airports (Newton and Trinca) illustrate static levels of based aircraft. It is noted that the current number of aircraft based at Greenwood Lake has substantially exceeded the forecast horizon values. This is likely attributable to its location, which is closer to the relatively more populated and higher income areas of metropolitan New York-New Jersey, and its public-ownership status. Greenwood Lake Airport was acquired by the New Jersey Department of Transportation in 2000. The no- or slow-growth in based aircraft at the Essex County and Morristown Municipal airports, which are classified as advanced airports in the New Jersey State Airport System Plan, reflects the limited terminal area capacity at these facilities at the time these projections were prepared.

The decline in based aircraft at the Essex County and Morristown Municipal airports between 2000 and mid-2009 is attributable to several factors. To begin, the 2000 count was taken prior to the events of September 11, 2001. Since then, operational restrictions at these airports and similar facilities across the country became overly burdensome to the less active pilot operating light aircraft primarily for pleasure purposes. These restrictions generally address the need for additional security and identification measures, and the inability to drive a vehicle to the aircraft and park it there while the aircraft was in use. These measures combined with increasing costs to base the aircraft and impacts associated with the economic downturn during the past few years have contributed to a decline in the total number of based aircraft at these airports. Concurrent with this decline is the shift in the based aircraft fleet to larger, more sophisticated aircraft used for business travel. As a consequence, the financial health of these airports has been retained and enhanced through higher tiedown and hangar rental fees, and larger volumes of fuel sales. Discussions with airport management at these facilities indicated that the majority of the aircraft were sold and transported to airports in other parts of the country and some overseas. Few aircraft were absorbed at area airports.



Table 3-3 PROJECTIONS OF BASED AIRCRAFT AT SUSSEX AND COMPETING AREA AIRPORTS							
			Based Aircraft				
Airport	System Plan Service or Functional Role		Base Year	Current	Forecast		
	Current	Future	2000		2005	2010	2020
Sussex	General	General	143	137	147	151	160
Aeroplex-Andover	Basic	Basic	54	53	55	56	58
Blairstown	General	General	159	120	163	168	177
Essex County	Advanced	Advanced	399	300	420	420	420
Greenwood Lake	General	General	57	90	61	66	77
Hackettstown	Basic	Basic	54	NA	55	56	58
Lincoln Park	General	Priority General	104	150	112	120	139
Morristown Municipal	Advanced	Advanced	325	240	330	334	340
Newton	Basic	Duplicative Basic	9	17	9	9	9
Stroudsburg-Pocono	Basic	Basic	30	34	32	33	37
Trinca	Basic	Duplicative Basic	15	10	15	15	15
Warwick Municipal	General Aviation	General Aviation	60	47	60	60	60
Sources:	2007 New Jersey State Aviation System Plan						
	2008 New York State Airport System Plan						
	2007 Pennsylvania Statewide Airport System Plan						

Aircraft Operations

The number of aircraft operations (takeoffs and landings) at Sussex Airport and its competing area airports is summarized in Table 3-4 on the following page. Aircraft operations at airports with an air traffic control tower (Essex County and Morristown Municipal) are verified levels and activity that occurs when the tower is closed during the late and early morning hours is generally not significant. Airport activity at non-towered airports nationwide reflects best-guess estimates that may be supplemented with acoustical counters or other counting methods. However, the use of that technology or staffed counting positions has not been applied for the non-towered airports listed in Table 3-4.

**Table 3-4
PROJECTIONS OF AIRCRAFT OPERATIONS AT SUSSEX AND
COMPETING AREA AIRPORTS**

Aircraft Operations							
Airport	System Plan Service or Functional Role		Base Year	Current	Forecast		
	Current	Future	2000		2005	2010	2020
Sussex	General	General	34,026	19,257	37,300	41,500	48,200
Aeroplex-Andover	Basic	Basic	24,826	24,286	25,900	26,800	29,000
Blairstown	General	General	23,228	23,264	25,700	28,400	33,800
Essex County	Advanced	Advanced	198,905	89,522	220,900	226,900	238,500
Greenwood Lake	General	General	29,523	16,269	32,200	35,200	42,400
Hackettstown	Basic	Basic	19,000	19,000	19,600	20,200	21,800
Lincoln Park	General	Priority General	58,453	58,453	64,800	71,200	88,300
Morristown Municipal	Advanced	Advanced	271,074	147,275	276,000	280,300	287,900
Newton	Basic	Duplicative Basic	10,695	10,695	10,700	10,700	10,700
Stroudsburg-Pocono	Basic	Basic	18,820	18,820	19,800	20,800	23,000
Trinca	Basic	Duplicative Basic	11,395	11,395	11,400	11,400	11,400
Warwick Municipal	General Aviation	General Aviation	7,000	5,000	7,000	7,000	7,000
Sources:	2007 New Jersey State Aviation System Plan						
	2008 New York State Airport System Plan						
	2007 Pennsylvania Statewide Airport System Plan						

Aside from the aircraft operations activity at Essex County and Morristown Municipal, which demonstrate a significant decline, the data suggest that the airports currently experience relatively low and common levels of use, in the range of about 14 to 67 average daily takeoffs and landings. These activity levels are well below the airfield capacity of the airports and currently reflect economic conditions.

Causes for the decline in aircraft operations at the Essex County and Morristown Municipal airports is primarily driven by the imposition of a landing fee for transient aircraft operating these facilities. This reduced the extent of training flights, primarily touch-and-go operations, by such aircraft. The decline in the number of based aircraft also contributed to the reduction in aircraft operations. Aircraft used for business purposes may depart the Airport on day one and return several days later, thereby generating two aircraft operations over an extended period of time.

Aircraft operations are distinguished in the industry as being local or itinerant. Local aircraft operations include those conducted by based and transient aircraft in the airport traffic pattern, simulated instrument approaches or training maneuvers within a 20-mile radius of the facility. Itinerant operations are all those other than local. Thus, takeoffs and landings made by aircraft

originating from or destined to distant airports are classified as itinerant. Nationally, itinerant operations range between 30 and 50 percent at general aviation airports based on FAA studies.

Comparatively, Sussex Airport appears to have high level of aircraft activity among the non-towered airports. The estimate for the current number of aircraft operations is attributable to the lack of avgas fuel at the Airport for eight months in the 2008-2009 time period, the decline in the number of based aircraft, the general economy, and issues surrounding the continued viability of the Airport. It is estimated that itinerant aircraft operations account for 40 percent of the activity at the Airport accounting for the number of based aircraft that are registered as business ownership and the relatively low amount of flight training that occurs at the Airport.

Given the 3,499' length of the runway for takeoffs and especially the reduced lengths available for landing, the use of the Airport reflects a mix of light piston and turboprop aircraft. On occasion, a light business jet carrying a minimal fuel load may opt to use the Airport. This may be more common when the pilot is familiar with the facility and the obstacle environment. It is unlikely that any significant light jet activity will occur at the Airport in the near future, and no such aircraft are currently based at the facility. In recent years, a smaller version of the light jet category and capable of operating at maximum weight levels from runway lengths as short as 3,500' has been introduced into the jet fleet. The term very light jet refers to jet aircraft approved for single-pilot operation, seating up to eight people including the pilot, and having maximum takeoff weights less than 10,000 pounds.



Occasional itinerant operations of very light jets may occur at the Airport, but unless it is based at the facility no sustained operational activity can be expected. Currently, companies that are likely to purchase very light jets are those trading up from twin-engine propeller aircraft such as the Beechcraft King Air, Cessna 400 series, and Piper Navajo. The current aircraft operating mix at the Airport can be expected in the future barring any change in the physical characteristics of the runway.

Airport User and Area Business Surveys

Telephone interviews were held with known business aircraft users of the Airport as well as area businesses that may use or might conduct flight operations at the facility. Area businesses to be contacted were suggested by the Sussex County Chamber of Commerce. The input received is summarized in this section.



Current business users based at the Airport find the airside facilities acceptable for their flight missions. There was general consensus in expressions of dissatisfaction concerning the lack of avgas for an extended period of time in 2008 and the first few months of 2009, the unavailability of the partial parallel taxiway to the south, the general condition of the terminal area

facilities, and lack of attention to basic ramp maintenance and utilization during snow and rain events. The convenience of the Airport to their base of operations overrode these concerns,

although they could become an issue that could result in relocation of the aircraft if not corrected in the near term. The positive side of their comments was the ability to use their aircraft to schedule multiple destination trips to visit clients and suppliers in a one-day period. Few aircraft owners indicated that others used the Airport to visit their local area business centers.



Area businesses that might use the Airport for their own travel purposes or to accommodate visitors to their facilities included hospitals, resort destinations, manufacturing and other industrial companies, and professional service organizations. A summary of their comments is listed below.

- They had limited, occasional or no use of the Airport to meet their business operational needs. Their parent organizations or businesses that they interact with frequently are located within a reasonable driving distance and time. Limited, occasional use may be interpreted as less than 10 times per year. None owned or operated an aircraft to support their business operations. Some businesses charter light jet aircraft and have fractional use through subscription to these aircraft to facilitate one-day trips to destinations that are not served on a nonstop basis from Newark-Liberty International Airport. Such use may be less than five times annually and involve one to three staff members, with Morristown Municipal Airport as the point from which their air travel begins and ends. These businesses had not considered requesting the charter aircraft to meet them at the Sussex Airport. Other businesses are using video conferencing to conduct meetings, especially when those persons are well known to each other.
- Similarly, visitors to their business locations have made limited, occasional use of the Airport, but the predominant means of access was by automobile. Those that arrive by air typically utilize the Morristown Municipal Airport or Newark-Liberty International Airport and drive to the area business facility. This may be attributable to the type of aircraft to which these visitors may have access.
- Where it appeared appropriate in the support of their business mission, some responded well to the idea of identifying the Airport as a means of transportation to their facilities. They indicated that they could include a link on their web site to one that described the aeronautical facilities and services available at the Sussex Airport for that purpose. It was recognized by these respondents that outside companies and other visitors unknown to them might have aircraft at their disposal that could facilitate a day-trip to their locations and that could lead to new business. This also applied to area resorts that might attract new attendance from aircraft owners seeking other opportunities for one-day entertainment and recreational destinations. However, some interviewees were reluctant to offer that link or promote the use of the Airport to their clients and visitors until the physical appearance of the facility was substantially improved.



- Some indicated that state and local environmental permitting regulations, the impact of the Highlands Water Protection & Planning Act, limited planned roadway infrastructure improvements, and local land use objectives with respect to industrial growth will likely narrow opportunities to attract those types of businesses that may have a preference to utilize general aviation aircraft transportation services.
- The area hospitals recognize the value of air transportation in emergency response situations as well as for non-critical transport of patients, although neither own or operate an aircraft, or are classified by the State as a Level I or Level II Trauma Center. The Newton Memorial Hospital has a helipad located near the entrance to its emergency room that is utilized by NorthSTAR, a medical evacuation (medevac) operation of the New Jersey State Police Aviation Unit organized under the New Jersey Emergency Medical Services Helicopter Response Program, or other designated helicopter operators that respond when NorthSTAR is unable. The NorthSTAR helicopter is based at the Somerset Airport, Somerville. St. Clare's Hospital has access to the helipad located at the rear of the Sussex Borough Fire Department building on CR 639 and about a mile from their facilities. NorthSTAR and other helicopter transport operators may use this facility depending on circumstances.



Discussions with representatives of the New Jersey Emergency Medical Services Helicopter Response Program indicated that establishment of a base of operations in northwestern New Jersey was not required as response times have been adequate and frequency of use was relatively low. They may consider establishing a base in central New Jersey near Lakehurst in the future as a third facility to complement their SouthSTAR operation based at the West Jersey Health System hospital in Voorhees. The Program currently employs the use of the Sikorsky S-76B helicopters that are able to transport a maximum of two patients. The aircraft is enhanced by an aerodynamic fuselage and retractable landing gear, has a cruise speed of 155 knots, and a fuel range of two hours. State-of-the-art instruments (such as TCAS and color radar) enhance the overall flight safety of the helicopter.

In those instances when air transport of patients or organs is conducted with fixed wing aircraft, the Sussex Airport has been used for these purposes in the past.

Implications for Future Activity and Business Integration

It is the opinion of QED that the projections of aircraft operations in the 2007 New Jersey State Airport System Plan at the Sussex Airport remain valid for planning purposes. These projections account for a longer historical perspective and reflect a generally improving economic environment over time. Stability in the ownership and operation of the Airport will also contribute to realizing these activity levels.

The forecast activity levels can also be realized through attraction of compatible industry to the Township of Wantage and area communities. The potential to develop suitable land areas on the Airport to support such economic opportunities, whether these are aviation-related or not, can stimulate the demand for business air travel.



New high paying jobs that can be created from such development also contribute to the use of the Airport for personal flying.

The number of based aircraft and operations activity serves to indicate the need for terminal area facilities such as tiedowns and hangars. The types of aircraft and their frequency of use provide support for runway length and instrument approach requirements, as well as determining airport design standards.

Chapter 4

AIRPORT IMPROVEMENT REQUIREMENTS

INTRODUCTION

As described in Chapter 2, the existing Airport is required to meet facility design standards because it has been the recipient of federal and state funding in its development and improvement. Public acquisition of the Airport will continue this situation as the Airport retains its federally-obligated status.



Airport facilities should meet design standards applicable to Airport Reference Code B-I, Small Aircraft Exclusively with a nonprecision instrument approach capability having visibility minimums greater than $\frac{3}{4}$ -statute mile to Runway 3 and a circling, visual approach to both runway ends.

The facilities noted in the sections below should be subject to more detailed planning and engineering design efforts.

REQUIRED AIRPORT FACILITIES

Based on the facilities review presented in Chapter 2 and the forecasts of based aircraft and aircraft operations shown in Chapter 3, the focus on airport improvements focus on obstruction removal/mitigation, rehabilitation of pavement areas, completion of the parallel taxiway and provision of new terminal area facilities.

Airside Facilities

The existing 3,499' runway length is adequate for current and anticipated users of the Airport, although action should be taken to mitigate the extent of the landing threshold displacement at each end of Runway 3-21. It would be desirable to demolish the house located in the approach surface to Runway 3 as soon as practical. This should reduce the landing threshold displacement from the current 420' to 130', thereby yielding a runway landing length of 3,369'. It is noted that this house is currently leased under a life tenancy; however, it may be possible to negotiate a relocation of the resident to another facility under the same terms and conditions.



A road, utility poles and treed terrain in the approach to Runway 21 necessitate the current 750' landing threshold displacement. QED estimates indicate that this displacement under present conditions could be reduced to 650' based on terrain elevations on the western edge of the approach surface. This should be subject to more precise field surveys. Notwithstanding this potential outcome, it would be desirable to bury the powerlines in the approach to Runway 21

for the width of the approach surface, as was accomplished earlier at the Runway 3 end. The burial of these powerlines will not change the location of the displaced landing threshold, but rather enhance the safety of aircraft preparing to land on this runway end as well as protect people and property on the ground.



The remaining primary airside improvements are the construction of the northern portion of the parallel taxiway for its length to the Runway 21 end, installation of a PAPI-2 on Runway 21, the rehabilitation of the Runway 3-21 pavement, and the acquisition of aviation easements for the area equivalent to the runway protection zone at each runway end. With respect to these aviation easements, the land area in question is the composite of the approach and departure runway protection zones that take into account the end of runway pavement and landing threshold locations at each runway end. The slope of the aviation easement for the composite area is 1' vertically for every 20' vertically, based on the runway end of pavement elevation. Longer-term airside improvements include the replacement of the runway edge lighting system and installation of a taxiway lighting system or reflective markers.

Terminal Area Facilities

The capital improvements for the terminal area provide for the following facilities and assume that operations conducted by current tenants in modular buildings will be incorporated into modern and permanent structures.

- Demolition and/or removal of all structures on the west side of the runway with the exception of the Custom Air Charters hangar.



- Construction of a new terminal building that

will house the operations center of the fixed base operator. A building providing a total of 4,000 sf on one or two levels should be sufficient for these purposes and accommodate such principal function space elements as a lobby area, flight planning room, conference room, classroom for ground instruction, eating area, flight line viewing area, office space for the fixed base operator and one or two additional tenants, and restroom and shower facilities.

- Construction of a 10,000 sf aircraft maintenance hangar.
- Construction of an avionics repair and installation hangar, approximately 4,000 sf in area.
- Construction of a parachute jump office with classroom space and a covered staging area; approximately 5,000 sf in total area.
- It is anticipated that about one-half of based aircraft owners will desire hangar storage. Approximately 40 percent of the based aircraft are hangared at present (on- and off-Airport) and there is a waiting list of 5 aircraft for hangar space at current on-Airport rates. This generates a requirement for the construction of 32 T-hangars with separate access to and from the parallel taxiway. These facilities are in addition to the continued use of the 48 privately-owned T-hangars located southeast of the Runway 3 threshold, and can be developed in stages through the forecast period.
- Rehabilitation of the transient apron area, approximately 13,000 sy in area and the addition of 3,000 sy to accommodate the longer-range demand.
- Construction of a based aircraft apron in the northern portion of the parallel taxiway to replace the hardstands along the adjacent taxilanes and provide a total of 80 tiedown positions in a single paved area. This facilitates the layout and maximizes use of the apron. This number of tiedown space is the balance of the based aircraft demand that is not stored in hangars, and is best achieved through a phased implementation program. The design for this pavement will necessitate special attention to soils and drainage requirements.
- At some time in the future, the two existing 10,000-gallon underground fuel storage tanks should be removed and new aboveground tanks installed at the most appropriate location. The existing underground tanks should be monitored for leakage and if determined to be sound, filled in with an inert material. Otherwise, these tanks should be removed and the surrounding soil treated prior to fill-in. Consideration should be given to fueling by truck, which will avoid the potential for aircraft congestion at a fueling island as is the current practice.



Airport Improvement Schedule and Costs

The required Airport improvements to meet long-range demands for aviation services are listed in Table 4-1 on the following page together with estimated establishment costs. The latter include allowances for engineering design plans, specifications, contract documents and services during construction. All improvements can be accommodated in land areas located on the western side of the Airport. The capital improvements are grouped in stages and priorities and are subject to more detailed evaluation as part of a future airport master or layout planning process. The 20-year capital improvement costs total \$10,830,000.

The FAA administers an airport improvement grant program that is funded by taxes paid by users of the nation's air transportation system. Currently, this Airport Improvement Program provides 95 percent of the total establishment cost of eligible projects at general aviation airports such as Sussex Airport. These include airfield pavements, airfield lighting systems, visual guidance landing aids, land and aviation easement acquisition, certain types of airport maintenance vehicles, and those improvements required to achieve compliance with applicable airport facility design standards. Projects that are revenue-producing and leased to the private sector are generally not eligible for federal grant funds. These typically include terminal area buildings and structures including hangar and fueling facilities. The FAA may fund terminal area facilities, excluding fueling systems, when all airside design standards are met. However, these types of projects have low priority status in the grant award allocation process. The FAA funds projects on a justified and need basis. Inclusion of a project on an approved airport layout plan does not confer a funding commitment.

The State of New Jersey will match federal grant funding with a contribution of 50 percent of the nonfederal share (2.5 percent when the FAA share is 95 percent) of the eligible project establishment cost. The State may also participate at a 95 percent contribution level when a project is eligible for federal funding but such funding is not available. Additionally, the State will fund the installation of aircraft fueling systems. Federal and State grant programs significantly lower the cost of providing primary airport facilities to the local airport owner. Airports that are publicly-owned as well as privately-owned, public-use airports that are designated by the FAA as relievers are eligible for grant funding. The Sussex Airport is a designated general aviation reliever airport, which has enabled the current owner to receive federal funding assistance for certain capital improvements in the past.

The phased, 20-year capital improvement cost of \$10,830,000 includes construction of a new terminal building, but excludes the private investment of existing on-Airport tenants to replace their existing terminal area facilities. Of this total, \$7,020,500 or nearly 65 percent is eligible for FAA funding. The State share totals \$469,750 and that allocated to the Township of Wantage is \$3,339,750. The FAA and State make grant funding determinations on the basis of justified need as demonstrated by the Airport sponsor in the grant application process.

Projects not eligible for federal and state grant assistance may be funded in whole or part by private third-parties under negotiated lease terms and conditions with the Township of Wantage as the public owner. Under such arrangements, the 20-year facilities establishment cost to the Township of Wantage could conceivably be reduced by as much as \$3,015,000 to yield a total capital investment of \$324,750. Alternative means to implement the non-eligible capital improvements as well as manage and operate the Airport are presented in Chapter 5 and Chapter 6.

Insert Table 4-1

Chapter 5

AIRPORT MANAGEMENT OPTIONS

INTRODUCTION

The ownership and management of an airport facility reflects a balance between policy and operational management. The airport owner makes the policies that will govern the management and operation of the facility. The management, or implementation of those policies can be carried out in a variety of organizational forms. This chapter highlights those ownership and management arrangements that may be suitable for the Sussex Airport and offers recommendations as to a preferred arrangement.

OWNERSHIP

The Sussex Airport is currently owned by the private sector. Because of its status within the New Jersey State Airport System, the Airport has been able to receive grant funds for certain capital improvements. Additionally, the Airport is included in the FAA's National Plan of Integrated Airport Systems as a general aviation reliever airport, which qualifies it to receive federal funding for planning and implementing grant-eligible projects because of its privately-owned status. These funding sources are applicable should the Airport be acquired by a governmental unit or public agency. Irrespective of the source of grant funding, the current maintenance and operation of the Airport relies on private funds and is dependent on the financial solvency of the Airport and its owners to meet these expenses.

Public ownership of an airport spreads the risk of financial management of the facility to the community and serves to ensure its continued use as an airport facility. The benefits of the airport to the local community in terms of access to the air transportation system are equivalent whether it is publicly-owned or remains in private ownership, provided that the airport continues to be operated and maintained to expected industry standards.



Public ownership also offers opportunity for expansion of the services made available to the public. A private owner may seek to operate the facility to support its own capabilities and interests, both in terms of the market it seeks to serve or perceives as the market potential, as well as its financial strength. Alternatively, public ownership carries with it an obligation to permit and/or encourage investment by private parties in the use of the airport to stimulate or provide improved levels of service in the event the market is considered underserved.

Therefore, the primary benefits of public ownership are the continuity of air access and the attraction of private investment to better serve the needs of the community.

Public ownership of airports in New Jersey can take several forms. The primary options include:

- Local governmental entity
- Airport authority
- Industrial / economic development authority or agency
- Community development corporations

Local Government Entity

Typically, the governmental unit in which the airport is located tends to be the owner of the facility. This affords local government to best coordinate the use of the land as an airport with other land uses within the community. At times, local government entities may own an airport located within the jurisdiction of another government. This arrangement can be successful, but may encounter difficulties when the two government entities have opposing views with respect to the role and character of the airport. There are many instances where such opposing circumstances have unduly influenced the management and operation of the airport facility to the detriment of its public users.

The Sussex Airport is physically located within the Township of Wantage, which would make this entity the initial primary candidate for ownership. Should the Township decline that role, the next logical governmental candidate would be Sussex County. Thereafter, the next level of government ownership would extend to the State of New Jersey, which currently owns other airports including two neighboring facilities (Aeroplex-Andover Airport and Greenwood Lake Airport.)

Airport Authority

Airport authorities are desirable in cases where no single local governmental unit seeks to own, manage or operate the facility. Airport authorities permit a form of multi-jurisdictional ownership and management that is autonomous from the individual governments that participate in the authority. Additionally, airport authorities can be created to have separate financial structures from local governments, which affords the potential to set and collect taxes to offset airport operations and development costs. This may be desirable when the airport is operated as a profit center or on an enterprise fund basis; when revenues must be generated specifically for the airport; when significant grants are used; and when operational and financial practices differ with municipal government practices. Airport authorities provide a level playing field of participation among local government participants, fostering positive relationships that ultimately work toward solutions that meet the needs of all communities involved.

New Jersey law allows the formation of an airport authority comprised of representation of two or more local governmental units. For example, the Sussex Airport could be owned and managed by an airport authority comprised of the Township of Wantage and Sussex County. Additionally, it is possible that an existing transportation-related authority could assume ownership of the Sussex Airport. The Port Authority of New York and New Jersey is a potential candidate because the Sussex Airport is a designated reliever airport to two of the five airports owned and operated by the Authority. These two airports are Newark Liberty International and Teterboro airports.

Industrial / Economic Development Authority or Agency

Industrial Development Agencies (IDA's) in New Jersey are economic development entities that seek to increase the amount of outside investment in a community or county, preserve and increase the number of local jobs, and market the assets of an area to outside businesses. Many IDA's use revolving loan funds with lower-than-market-value interest rates to attract business investment. IDA's do not have to be formed by State legislation, but instead, can be formed locally by incorporation. The FAA has recognized and funded airports owned or acquired by IDA's. At present, there is no established IDA operating within Sussex County.

Community Development Corporation

Community Development Corporations (CDC's) are not-for-profit corporations whose purpose is to benefit the local community or region. The structure of CDC's also permits banks to form such corporations in order to participate in local community development. Non-bank CDC's are mostly non-profit versions of Local Development Corporations (LDC's). These corporations can be formed by municipal governments, industrial development agencies, and other municipal or regional groups to undertake special projects. Specifically, projects can include job creation, education, charitable objectives, residential rehabilitation and development, operation of commercial or industrial facilities, operation of transportation facilities, and the like. In essence, a non-bank CDC can operate for the public benefit in numerous ways, including the operation of an airport. There are no CDC's established in the Sussex County region at present.

OPERATION AND MANAGEMENT

The operation and management of an airport can be established in two basic manners, each of which is possible under any scenario of airport ownership discussed above. The owning agency can hire staff to provide management control and conduct the maintenance function for the facility. This staff can also offer services to airport users such as aircraft fueling and maintenance, other ground support services, and flight training. The second primary option is for the owning agency to contract the management and operation of the airport to the private sector. As way of example, the management and operation of the airport could be assigned to a firm that specializes in providing only airport management services and that does not interact with the airport tenants and users. Alternatively, the owning agency may opt to include airport management and operation duties in a lease with a fixed base operator whose primary interest is in serving the needs of the airport users and operating a business for profit.



Owner as Operator and Manager

Typically, the selection of a preferred course of action for management of the airport is dependent on the financial strength of the airport operation. The operating revenues at an airport need to be sufficient to fund the staffing and operations costs of the owning agency performing this role, which could be expanded to include the sale of aircraft fuel and other services. Several governmental units own and manage their airports under such arrangements, but most do not fulfill a fixed base operator role, preferring that private sector entities operate under a lease arrangement to provide line services (fueling and ground support); aircraft, avionics and other forms of maintenance; ground school and flight training; and air taxi and other flight services to the general public.

The public owner may also engage the services of a private sector airport management firm to provide daily airport administration, facilities maintenance and oversight of the businesses operating at the airport. Airport administration duties can include such activities as rental and lease fee management; payment of operating expenses for power, utilities and other services; first line communication with federal, state and local agencies; and ensuring adherence to security controls and practices by all tenants. Again, there is a need for the airport to generate sufficient operating revenues to compensate the airport management firm for performing these duties. Such firms may also be compensated on an incentive fee basis determined as a percentage of the net operating income (revenues less expenses.) This form of financial arrangement requires considerable oversight by the airport owner to ensure that all necessary actions to maintain and operate the airport safely are being undertaken by the management company. Although the retention of a private airport management firm may have some appeal, in practice there are few instances of such arrangements in existence in the country today.

Fixed Base Operator as Operator and Manager

Most small, general aviation airports typically contract with the fixed base operator to provide day-to-day management of the facility including routine maintenance such as mowing; snow clearing; inspection of the airside and landside facilities including replacement of light fixtures on the runway and taxiways; minor airside and terminal area facility maintenance; lease



management of aircraft tiedown and hangar spaces; and first line coordination with federal, state and local government agencies. Major facility maintenance and repair actions are typically assigned to the airport owner, who also provides oversight of the fixed base operator performance as airport manager. The fixed base operator is compensated for the provision of these airport tenant and facility management responsibilities. This can be in the form of credits against leases and other fees to be paid to the owning governmental unit under its lease agreement, or as a direct payment.

Positive aspects of having fixed base operator management include:

- Reduction in Duplicate Labor – because the fixed base operator must attend the airport during business hours, the addition of airport management function responsibilities does not generally require the assignment of more personnel.
- Attraction of Business – the fixed base operator is operating on a for-profit basis and may seek new business opportunities for the airport. This benefits both the airport and the fixed base operator.
- Reduction in Administrative Effort – when the fixed base operator manages the airport, it can be responsible for billing clients, collecting rents, paying airport invoices, and providing other administrative support which relieves the airport owner of these duties..

Negative aspects of having fixed base operator management include:

- Special Interest – some business activity that may benefit the airport and/or the local community can be perceived as a threat by the fixed base operator. Particularly, the introduction of competition that may lower prices or bring alternative services to airport may be shunned by the existing fixed base operator.
- Lack of Control – some control is forfeited by the airport owner when contracting management to a fixed base operator. Changes in the agreement must often wait until the contract expires or must be renewed. If the change is necessary, there is generally a premium that must be paid to the fixed base operator to amend the contract.
- Lack of Specialized Expertise – the fixed base operator may lack desired elements of public management such as marketing, conference attendance, and the political savvy to address different constituents.
- Audit and Cost Accounting – public-private partnerships usually fail because the agreements do not nail down important issues in the contract such as year-end audits for percent-of-gross agreements or acceptable methods of cost accounting.

A determination of the preferred airport management and operation option for the Sussex Airport can be facilitated through an evaluation of pro-formas for each operation and management structure.

If the fixed base operator option is selected, key elements needed for success include:

- Proper Wording of Fixed Base Operator Solicitation – the terms requested for the fixed base operator should be itemized and include the necessary assigned responsibilities. The value of these responsibilities should be estimated prior to the release of a request for qualifications or proposals for the fixed base operator contract.
- Term of the Agreement – the airport management and operation agreement should be for three to five years with options to renew. The option periods can include renegotiation of terms, if needed. This agreement addresses only the airport operation and management duties assigned to the fixed base operator. A separate agreement

should be negotiated for the provision of typical fixed base operator services to the public and subject to terms of the request for qualifications or proposal. This allows for the incorporation of an appropriate lease term in the event that the fixed base operator is to make a capital investment in airport facilities.

- Costs of Operation -- even though the fixed base operator may be managing the airport, many of the maintenance costs remain with the airport owner. Depending upon the negotiated terms, maintenance can include mowing, snow plowing, minor capital maintenance for visual landing aids, buildings, fueling systems, access roads and parking areas. It is assumed that the airport owner will pay all major capital maintenance and match all federal and state grant amounts.
- Reasonable Expectations – many communities err in thinking that the fixed base operator is making money or getting rich at their expense. This often leads to bad communications and hard feelings. It is important to enter these agreements with reasonable expectations and to provide the fixed base operator with the opportunity to earn a reasonable return on investment.

When comparing the costs and benefits of using fixed base operator management over self-management, it is important to quantify the value of all services being provided. That is, issues such as routine maintenance, snow plowing, airport inspection, airport staffing, mowing, aircraft marshalling, and rent collection all have values that should be quantified. If the fixed base operator proposes to replace any of the services provided by the airport owner at a future time, a value should be placed on that service. In this regard, it is important to know what it costs the airport owner to provide that service and what the fixed base operator will charge for that service. The cost of personnel is another issue that can be compared directly.

Comparisons using financial pro formas should be developed that examine all costs and associated revenues. For example, if the fixed base operator will collect certain rental fees for part or all of the revenue associated with those fees, it is important to determine what revenues will be given up by the airport owner. Knowing what it costs to collect these fees gives a good estimate of what is actually being lost.

Pro formas that reflect the airport owner providing the operation and management services and assignment of those responsibilities to the fixed base operator are presented in Chapter 6.

FEDERAL AND STATE FUNDING ELIGIBILITY

Public ownership of the Sussex Airport provides access to grants that fund the planning, design and implementation of eligible capital improvements. Eligibility is determined by the type and use of the facilities to be provided. The State of New Jersey and the Federal Aviation Administration collect taxes and fees from users of the airport and aviation system to fund these grants. Airport maintenance and operations costs are not eligible for state and federal funding. Continued private ownership of the Airport enables federal funding provided that it continues to be designated as a general aviation reliever airport. The State of New Jersey provides funding for all airports provided that they open to public use. Table 5-1 on the following page highlights some of the principal projects that are and are not eligible for state and federal funding.

Table 5-1 SUMMARY OF FEDERAL AND STATE FUNDING ELIGIBILITY		
Principal Project Type	Project Eligibility Status	
	Federal Funding	State Funding
Airport planning	Yes	Yes
Environmental assessments	Yes	Yes
Engineering design	Yes, for eligible projects	Yes, for eligible projects
Land and easement acquisition	Yes	Yes
Airfield and apron pavements	Yes	Yes
Airfield lighting and drainage	Yes	Yes
Airfield marking	Yes	Yes
Visual landing aids	Yes	Yes
Hangar facilities for aircraft storage	Yes, when all airside standards are in compliance	No*
Terminal buildings	No	No
Automobile parking areas	No	No
Aircraft maintenance facilities	No	No
Aircraft fueling systems	No	Yes
Airport maintenance buildings	Yes, if used for eligible maintenance equipment	No*
Facilities relocation	Yes, if required to implement an eligible project	Yes, if required to implement an eligible project
Off-Airport improvements	No	No
Off-Airport land acquisition	Yes, for eligible projects	Yes, for eligible projects
Airport facilities maintenance	No	No
Airport operations and administration	No	No

* State provides 50 percent of nonfederal share when this project type is funded by the FAA.

FINDINGS

Sussex Airport is a relatively low-activity facility that has the potential to attract more users and provide higher levels of service to the general aviation community. However, such gains may not be realized until there is a major capital investment to provide modernized terminal area facilities and improved aircraft movement areas as presented in Table 4-1. The ownership and management of the Airport needs to reflect the scale of the operation and its associated financial capabilities

A recommendation for acquisition of the Sussex Airport by the private or public sector is presented in Chapter 8 and includes the assessments of financial feasibility and economic impact presented in Chapter 6 and Chapter 7, respectively.

Chapter 6

FINANCIAL FEASIBILITY ANALYSIS

INTRODUCTION

A basic premise of airport financial management is that to reduce the burden on federal, state and local tax resources, airports are required to adopt a fee and rental structure that is as self-sustaining as possible. Obligated airports charge aeronautical users rates that are subject to the standard of reasonableness and nondiscrimination and may be less than fair market value. Rates and charges reflect the capital investment made by the tenant, lease terms and other factors associated with its operations and market conditions. The FAA defines an aeronautical use as any activity that involves, makes possible, or is required for the operation of aircraft, or that contributes to or is required for the safety of such operations. Generally, obligated airport owners must impose fair market value commercial charges for nonaeronautical uses of airport property. FAA's Federal Compliance Handbook 5100.6B addresses these issues in detail.

This financial pro forma analysis is designed to provide the Township of Wantage and other stakeholders with information necessary to adequately assess the financial feasibility of purchasing the Sussex Airport. Although the analysis presented herein is comprehensive in nature, changing economic conditions, forecast activity demand levels, and assumptions about non-aviation development may impact it from year to year. The financial analysis for Sussex Airport is dependent, in part, upon financial data provided by the current owner of the Airport. Because these are not audited reports, the veracity of the data cannot be confirmed. However, comparative financial data from comparable airports were researched to ensure the reasonableness of the numbers. Using these projections, a net revenue analysis was conducted to determine whether or not operating surpluses or deficits could be expected and if there would be sufficient funds to implement a capital improvement program.



Three operating scenarios were evaluated for which pro formas have been developed that examine operating revenues and expenses, and capital improvement cost requirements for a 10-year period beginning in 2010. The term 'government entity' has been used and applies to the Township of Wantage, Sussex County or any other public agency authorized to acquire the Airport.

- Baseline pro forma assuming new private ownership and management, that is, not the current Airport owner
- Government entity purchase of the Airport serving as the fixed base operator (FBO) and management
- Government entity purchase of the Airport using an FBO as management

The baseline pro forma provides a benchmark upon which to compare the two purchase options.

BASELINE PRIVATE OWNERSHIP AND MANAGEMENT FINANCIAL PRO FORMA

Revenue and expense data were available from the current owner of the Airport for the existing timeframe only. Thus, no historical data could be examined to determine trends in revenues or expenses. The following sections explain the use of the data that was provided.

Airport FBO Revenue and Expense Data

Airport revenue data provided by the current owner of the Airport is presented in Table 6-1 on the following page. As shown, this information presents revenues from activity sources on- and off-Airport without regard to the actual collection of the sums indicated. Fuel sales, which are a major component of the Airport's operating revenue stream, reflect an estimated average over the past few years inasmuch as low lead avgas was not available for about eight months during 2008-2009. The current Airport owner operates an aircraft repair business from the aircraft maintenance hangar, which generates the second highest level of operating revenue. Other tenants at the Airport pay only a ground rent for use of the facilities provided by the Airport owner. The off-Airport T-hangar owner pays a fee per aircraft to access the airfield.

Revenue Item	Amount (\$)
Aircraft Tiedowns	72,900
6-Unit T-Hangar	7,200
1-Unit T-Hangar	3,000
1-Unit Corner Hangar	4,200
1-Unit Conventional Hangar (privately-owned)	2,400
Quonset Hangar	6,000
Pitts Hangar	3,600
Off-Airport T-Hangars(privately-owned)	5,760
Parachute Jump Operator (ground rent only)	24,000
Radio / Avionics Shop (ground rent only)	9,000
Welding Shop (ground rent only)	3,600
Fabric Tent Storage Facility (ground rent only)	4,200
Aircraft Maintenance Shop (gross sales)	120,000
	0
Billboard Advertisement	1,200
100 Low Lead Fuel (60,000 gallons)	240,000
Jet-A Fuel (10,000 gallons)	42,500
Total Annual Revenue	549,560
Source: Airport owner, June 2009.	

The annual operating revenue may be expressed as a function of the number of based aircraft. This ratio is \$4,011 when including gross revenues from the aircraft maintenance operation. The ratio decreases to \$3,135 when this revenue source is excluded. These unit operating revenue values may be compared with other airports operating under similar circumstances to assess their appropriateness for use in this study. One such airport is the Rostraver Airport serving Monongahela, a suburb southeast of Pittsburgh, Pennsylvania. The Rostraver Airport is one of two airports owned by the Westmoreland County Airport Authority, which acts as the

fixed base operator and manager of the facility. The Authority sells avgas and Jet-A fuel and leases aircraft tiedown and hangar spaces. On-Airport tenants provide aircraft maintenance. Therefore, it is preferable to compare its annual operating revenue per based aircraft with the \$3,135 value for Sussex Airport. The Rostraver Airport has a single runway, 4001' in length, nonprecision instrument approaches to each runway end, serves as a base for 110 aircraft including 2 business jets. In 2007, the Airport was estimated to accommodate 43,652 aircraft operations, of which 23,442 operations were local and the remaining 20,210 operations were itinerant. This compares with the 19,257 total annual aircraft operations currently estimated to occur at Sussex Airport (11,554 local and 7,703 itinerant.) In 2007, the latest year for which audited financial statements are available for Rostraver Airport, total operating income from all sources was \$765,115. This equates to \$6,956 per based aircraft, a value that is more than twice the \$3,135 amount generated at the Sussex Airport.

Another comparison of operating revenue per based aircraft maybe derived from financial statements prepared the City of Fernandina Beach, Florida for its municipal airport. The Fernandina Beach Municipal Airport has three runways ranging in length from 5,000' to 5,301', instrument approach procedures, and 70 based aircraft including 1 business jet. The Airport is estimated to have accommodated 47,000 aircraft operations in 2007, of which 10,000 operations were local and the balance of 37,000 operations were transient owing to the resort character of the Fernandina Beach area. The City leases all tiedowns and hangar spaces to Airport users. The fixed base operator leases the general aviation terminal from the City and sells avgas and Jet-A fuel. Other on-Airport tenants provide aircraft maintenance services. In 2007, the Airport Fund reported \$327,928 in operating revenues generated by aircraft and user activities. The Airport leases land to an adjacent golf course and this revenue was excluded from the total indicated above. This annual operating revenue value equates to \$4,685 per based aircraft, an amount that is less than generated at the Rostraver Airport and primarily attributable to the aviation fuel sales that are earned directly by that airport owner and operator.

The unit revenue per based aircraft differences between Sussex Airport and the two comparative facilities may be substantiated by several reasons. The first is that the number of aircraft operations at both the Rostraver Airport and the Fernandina Beach Municipal Airport are more than twice that estimated at Sussex Airport, thus generating additional opportunities to sell aviation fuel, which is the greatest contributor to operating revenues. Second, the off-Airport T-hangar owner is remitting a low fee for access to the Airport. That access fee for each occupied T-hangar space is the greater of \$10 per aircraft engine per month or the lost tiedown fee from those aircraft relocating from on-Airport tiedown space. A third reason is that on-Airport tenants are not paying a small percentage of their gross revenues to the Airport owner for the privilege of conducting business at the facility. Further, although the current Airport owner is charging lower rates for aircraft tiedown and hangar storage than competing airports offering generally similar facilities and services, the difference may be greater than the market actually demands. Upward adjustments to these revenue sources will increase annual operating income and yield higher revenues per based aircraft values. Another factor that decreases the revenue per based aircraft ratio at the Sussex Airport is that some of the based aircraft based are not being actively flown or are not flight-worthy and thus do not generate revenue other than for tiedown or hangar storage fees. Accordingly, it was determined that the unit operating revenue value per based aircraft for Sussex Airport is reasonable under its current operation and management arrangements.

A comparison of annual operating expenses at these three airports is inappropriate given the differences in airport size, extent of airport facilities, form of ownership, and management arrangements. It is noted, however, that the Rostraver Airport required a \$74,900 subsidy from Westmoreland County government to meet its operating expenses, while the Fernandina Beach Municipal Airport showed a net operating income of \$79,013 in 2007.

Table 6-2 presents the average annual operating expenses for the Airport under the current private ownership and management.

Table 6-2 AVERAGE ANNUAL OPERATING EXPENSES – SUSSEX AIRPORT	
Expense Item	Amount (\$)
Salary Cost (3.5 staff)	130,000
Real Estate Property Taxes	40,152
Liability Insurance	12,000
Electric Utility	24,400
Fuel Oil (heating)	5,000
Equipment Fuel	1,400
State Sales Taxes (aircraft maintenance)	9,000
Aircraft Shop Parts	40,000
Equipment Maintenance	8,000
Telephone	4,800
Office Supplies	1,200
100 Low Lead Fuel (60,000 gallons)	180,000
Jet-A Fuel (10,000 gallons)	32,500
Total Annual Expenses	488,452
Source: Airport owner, June 2009. Real estate property taxes are year 2008.	

Aside from the purchase of aviation fuel, salary cost is the highest expense item, followed by parts to service the aircraft repair and maintenance activities. These salaried staff includes the Airport owner and two aircraft mechanics that also conduct general Airport maintenance activities. Real estate property taxes account for slightly more than eight percent of total expenditures, a cost that would not be incurred if a government entity owns the Airport. The expenses are appropriate for an enterprise the size and character of Sussex Airport.

As shown in Table 6-1 and Table 6-2, annual operating revenues exceed operating expenses yielding an operating surplus of \$61,108. This sum can be taken as additional personal income to the Airport owner or, preferably, reinvested in the Airport. When taken as additional income, considerations of revenue diversion may become an issue if challenged in an FAA audit and determined to be 'excessive', which is not easily defined. The FAA may take this position, however, because diverted revenue can result in higher rates and charges to airport tenants that may exceed standards of reasonableness. Additionally, the diversion of funds could also adversely impact the implementation of needed safety enhancements and capital projects. The FAA should be consulted prior to taking personal income from net operating revenue of the airport in order to avoid a revenue diversion determination.

Forecast of Private Ownership Revenues and Expenses

The forecast of operating revenues and expenses for private ownership and operation of the Airport under new ownership was initiated by modifying the existing financial performance at the Sussex Airport for each revenue and expense category based on a new private owner, and then extrapolating those for future years. Projections of financial performance assume that the representation of recent past revenue and expense averaged data is reliable. These projections keep 2010 levels the same to allow for administrative time for the transfer of ownership and execution of new lease agreements with existing Airport tenants to take effect in 2011. The projections then extend 10 years into the future.

Operating revenues assume that:

- Rents for on-Airport tiedown spaces and ground rent for the single, existing owner-occupied hangar are tied to inflation beginning in 2011.
- Fuel margins (retail less wholesale prices) are earned by the Airport owner. This is a change from the private fueling operation that currently exists and does not pay a fuel flowage fee to the current Airport owner. Fuel margins increase with the rate of total aircraft operations plus inflation (3.5 percent annually over the 10-year period) and based on the averaged value of fuel sales and purchases presented for the baseline period of 60,000 gallons low lead avgas and 10,000 gallons Jet-A, increasing to about 70,100 gallons and 11,700 gallons, respectively, by 2020.
- Rents for existing on-Airport hangars owned by the current Airport owner and leased to commercial providers of aircraft and aviation services are tied to inflation, beginning in 2011. These tenants will construct new structures by the year 2013 and pay a ground rent tied to inflation for the balance of the 10-year analysis period.
- The aircraft maintenance operation of the current Airport owner reverts to a new private operator that pays a ground rent tied to inflation beginning in 2010. This operator will construct a new maintenance hangar by the year 2013 and a ground rent will continue to be applied and tied to inflation for the balance of the 10-year analysis period.
- The off-Airport T-hangars will remain in private ownership and a fee equivalent to the based aircraft tiedown rate is charged for each occupied T-hangar unit. The obligated status of the Airport establishes the basis for a new agreement that will be viewed as reasonable and nondiscriminatory when subjected to FAA review, if requested by the agency.
- The new Airport owner constructs a new general aviation terminal building in 2011 and the first set of 12-unit T-hangars in 2015, and the second set in 2020. Rental rates for the T-hangars cover amortization, maintenance and allowances for vacancy costs during the 10-year analysis. Other tenants may occupy and lease space in the terminal building to provide aviation- and nonaviation-related services, or these may be provided by the new Airport owner.

Operating expenses assume that:

- Salary and wage costs increase at about two-thirds the rate of inflation (2.5 percent annually) with an increase in employee staffing levels in 2015 and 2018.
- Insurance costs increase faster than inflation (7 percent annually) as reflected in national trends for the aviation sector.
- Property tax mill rate increase at the rate of inflation (3.5 percent annually) for the Airport land and improvements and adjusted as existing improvements are replaced by tenant investments. Property taxes paid by tenants are not included in the pro forma.
- All other costs increase at the same rate as inflation (3.5 percent annually.)

Table 6-3 (page 6-15) presents the baseline projection of operating revenues and expenses for the new private ownership and management scenario.

The baseline forecast indicates that operating revenues are anticipated to outpace operating expenses in each year of the 10-year forecast period, particularly when the rental income from the first and second sets of 12-unit T-hangars is included in 2015 and 2020. The access fee paid by the off-Airport T-hangar owner also contributes significantly to operating revenues. The operating revenue in 2013 declines slightly due to the change in ground rents paid by tenants that finance and construct replacement facilities to support their operations and services.

The operating revenue is also dependent on how the new airport owner opts to provide services to the aviation public. For example, consider the option that the aircraft repair and maintenance is not provided under a lease arrangement with another entrepreneur, but instead by the new airport owner. In that case, the new airport owner earns more revenue from this activity, but also incurs the cost of constructing the new aircraft repair and maintenance hangar, and salary cost, sales taxes, and shop parts and supply expenses associated with this activity. Implementation of this option should result in a higher net operating income to the new airport owner as competition for the increased business risk that is assumed.



When commercial on-Airport tenants provide services to the aviation public, the new lease agreements may also incorporate a percent of gross revenue charge paid to the airport owner. Or, other financial arrangements can be made that would avoid the need for accounting audits that may prove difficult to administer between private parties and provide an equivalent level of compensation. A percentage of gross revenue provision, in the range of 5 percent to 10 percent is commonly used to reflect the fact that the airport owner is providing a unique and valuable location from which these businesses may operate, and that there is an initial and on-going expense to maintain the utility of that location. Allowances for percentage of gross revenue payments are not included in this analysis and, therefore, yield a conservative estimate of operating revenues under the private airport owner scenario.

GOVERNMENT ENTITY ACQUISITION AND PROVIDING FBO AND MANAGEMENT FUNCTIONS

This option suggests that a government entity purchases the Sussex Airport and assumes responsibility for the management and operation of the facility. The latter includes such activities as:

- On-site daily management
- Fuel purchases and sales
- Mowing and snow plowing
- Collection of facility rental and Airport access fees
- Finance and construction of a new general aviation terminal building and T-hangars



Under this scenario, the government entity enters the aircraft fueling and management business. Operating and managing the Airport on a seven-day a week, and typically dawn-to-dusk basis requires time, attention and staff. Personnel requirements include at least two full-time and two part-time employees. The full-time employees aided by part-time staff during peak periods would concentrate their efforts on overseeing the fuel service, airfield and terminal area facilities maintenance, grounds maintenance including mowing and snow plowing, collection of fees, handling the daily business affairs at the Airport and interacting with the users. During business hours, Airport staff would pump the fuel with self-serve fuel facilities available for use by pilots after normal business hours. It should be kept in mind that low-lead avgas customers are more willing to pump their own fuel than those who purchase Jet-A fuel, and this may require the Airport staff to be on-site during any hour of the day or night. On-call status also is required to address Airport maintenance and operations responsibilities that cannot be scheduled such as those caused by weather-related events. The Airport is an essential public service that under most conditions is expected to be open for operations. Labor costs, including benefits, per employee are likely to be higher for a government entity than for a private contractor.

Specialty FBOs would be engaged to provide the mix of airport and pilot services currently performed at the Airport by current tenants under new lease agreements. It is anticipated that the aircraft repair and maintenance services would be performed by a new entity, possibly the employees of the current Airport owner, under a new lease arrangement. The off-Airport T-hangar operator would continue to pay an appropriate access fee in order to meet FAA standards that emphasize the reasonableness of rates and nondiscrimination in providing access to Airport facilities. This access fee should be equivalent to that charged for based aircraft tiedown and apply to all occupied T-hangars. A new lease agreement between the government entity and the off-Airport T-hangar operator will be required. The financial feasibility pro-forma of this form of Airport ownership and management incorporates such new lease arrangements.

The downside of a government entity operation is similar to any public operation competing with private enterprise. For various reasons, private enterprise is generally more customer-friendly because there are incentives for success. In the public sector, however, there are generally very few incentives for financial success. This tends to create an atmosphere where employees

protect themselves, but do not take risks that are sometimes required to make a profit. In an industry where service is the key to success, public operation of an FBO can be challenging. Notwithstanding this observation, there are government-owned and operated airports that are very successful operations.

Operational assumptions are needed to develop a pro forma for the government entity as airport FBO and management option. The revenue items in this scenario are equivalent to those for private airport ownership. The operating expense items also incorporate a 3.5 percent annual rate of inflation and primarily differ from those associated with the private ownership and management scenario due to staffing costs, real estate property tax payments, and a provision for professional services that tend to be more frequently engaged when a government unit owns the airport. The assumptions incorporated into the analysis of a government unit owner and operator are highlighted on the following page.

- The government entity will construct and occupy the new general aviation terminal building by 2011.
- As in the baseline condition, existing hangar and building ground rents paid by on-Airport commercial tenants accrue to the government entity. The ground rent also applies as new, replacement facilities are constructed by the tenants by the year 2013. Ground rents through the year 2012 reflect the value of these existing facilities, as they were included in the acquisition cost of the Airport. Upon tenant-financed construction of their new terminal facilities, the ground rent is likely to decrease and then rise with inflation, to reflect the tenant capital investment.

There is the alternative that the replacement hangars and operations structures could be constructed by the government entity. A positive feature of this arrangement is the potential for reduced monthly rental fees paid by the tenants due to possible lower financing costs. The government entity would realize increased rental revenue to cover amortization and maintenance costs associated with the facilities.

- The government entity could charge a percentage of annual gross revenues on a monthly basis, typically between 5 percent and 10 percent, from commercial businesses operating at the Airport as a fee to offset its share of Airport capital improvements, and maintenance and operating costs. The percentage value typically varies based on negotiated lease terms and conditions and the extent of the capital investment made by the tenant. This is in keeping with FAA policies that require obligated airports to charge reasonable and nondiscriminatory rates to tenants and users of the airport facility. Because the revenues from some of the businesses currently operating at the Airport are unknown, it was not considered prudent to include estimates of such revenue to the government unit in the pro forma. This ensures a conservative approach to the analysis. Should the financial feasibility of this form of Airport ownership and management be established without this lease provision, its inclusion would serve only to improve the government entity's financial position.
- The first of 2 sets of 12-unit T-hangars are constructed by the government entity in 2015 and the second set in 2020, which entitles it to the full rental revenue.

- Two full-time and two part-time employees would be at the Airport daily from 8:00 a.m. to dusk through the forecast period, and on an on-call basis. These personnel would conduct Airport administrative and operational activities including aircraft fueling and general Airport maintenance such as mowing, snow removal, and airfield and terminal area facility light replacements. Salary costs increase at 2.5 percent annually.
- Insurance costs are the same as in the baseline scenario, but added to the government entity's existing risk insurance policy at an initial additional premium of \$15,000 and increase at 7 percent annually.
- Allowances are provided for professional services with respect to defining and negotiating new lease agreements in 2011 and 2015, and other assistance not eligible for federal and state grants in other years.
- The real estate property tax expense is eliminated.

Table 6-4 (page 6-16) presents a 10-year forecast of operating revenues and expenses under the government entity ownership and FBO operation and management scenario. It illustrates a financial operating outcome that yields annual net operating income for each year beginning in 2011. The net operating income drops to nearly breakeven in 2013 and 2014 as hangar and building rents are replaced with ground rent-only payments from Airport tenants that finance and construct new, replacement facilities. Thereafter, the inclusion of rental income from new T-hangars constructed by the government entity enables an increasing trend in net operating income.

GOVERNMENT ENTITY ACQUISITION AND CONTRACTING FOR FBO OPERATION AND MANAGEMENT

This scenario presents a contractual arrangement with an FBO essentially managing and operating the Airport owned by the government entity. This form of management and operation is similar to the new private owner scenario, with the exception of the Airport ownership. The terms of an agreement with an FBO would assign it such responsibilities as:



- Daily Airport operations management including interaction with tenants and users
- Fuel purchases and sales
- Airport mowing and snow plowing
- Aircraft tiedown fees collection
- Off-Airport T-hangar access fee collection
- Construction of new general aviation terminal and on-Airport T-hangars
- Leasing of on-Airport hangars and aircraft tiedown spaces

This scenario contemplates the continued operation of the on-Airport aircraft repair and maintenance facility, parachute jump activity, radio/avionics repair and welding shop by businesses not owned by the contracted FBO and made possible under separate leases with the government entity. As in the previous scenarios, these specialty service providers will

finance and construct their new, replacement facilities by the year 2013. The government entity would be compensated by these businesses with ground rents and, possibly, a percentage of gross revenue as in the scenarios described previously. If the government entity constructs the required hangar and building facilities for these tenants, the revenue streams would be higher and accrue directly to it, bypassing the contracted FBO.

Operating revenue and expenses to the government entity differ when an FBO is contracted to manage the Airport facilities on a daily basis. These are reflected in the pro forma for this scenario and include:

- Aircraft tiedown fees and off-Airport T-hangar access fees are collected and retained by the FBO as compensation for the labor-intensive nature of this responsibility. These represent revenue from facilities that were not constructed by the government entity.
- The government entity would retain ground rents paid by commercial on-Airport businesses, as these facilities are included in the acquisition cost of the Airport. This revenue stream continues after the new, replacement facilities financed and constructed by these tenants are operational in 2013. However, the ground rent decreases to reflect the capital investment made by the tenant.
- Although the government entity is entitled to a percentage of gross revenue from these businesses as well as the contracted FBO, estimates of such percentage of gross revenue have, conservatively, not been included in the pro forma.
- The FBO will construct the general aviation terminal building in 2011 and pay a ground rent to the government entity. This forms the focal point for the Airport and is the major feature of the FBO leasehold, which also includes the apron and aircraft fueling areas. The FBO leasehold is approximately 150,000 square feet in area.
- The FBO will construct the first of 2 sets of 12-unit T-hangars in 2015 and the second set in 2020, and pay a ground rent to the government entity.
- The FBO will staff the Airport and personnel from the government entity are not required. There would likely be a 'management fee' needed to induce an FBO to provide management services on behalf of the government entity and an allowance of \$50,000 was made for budgetary purposes in the first year (2011.) The management fee compensates the FBO for services not related to revenue producing activities such as administration, attending meetings, reporting to the government entity, invoicing, mowing, snow plowing and other facilities maintenance.
- The FBO will retain net aviation fuel income and pay a four percent fuel flowage fee as part of a lease agreement. The fuel flowage fee is assessed on all low lead and Jet-A fuel delivered to the FBO. The fuel flowage fee is applied to the price paid by the FBO to the fuel supplier. This simplifies the accounting process and industry practice is for the fuel supplier to pay the fuel flowage fee directly to the airport owner.
- The FBO is required to pay all Airport operating utility bills.

- Mowing, snow plowing and minor upkeep of the Airport would be the responsibility of the FBO using service vehicles and equipment provided by the government entity. This provision is negotiable, depending upon the FBO capabilities and desire to perform these services. It is possible that crews employed by the government entity can provide these services more cost-effectively.

As in the previous pro formas, allowances for inflation in revenues and expenses has been incorporated in the analysis.

Table 6-5 (page 6-17) presents a 10-year forecast of operating revenues and expenses under the government entity contracting out the FBO operation and management functions. The data in Table 6-5 indicates that this scenario can generate net operating income in each year except 2014. However, it may be more practical to view the resulting net operating income in each year of the analysis period as essentially breakeven. The ground rent contribution associated with the second set of 12-unit T-hangars in year 2020 initiates the opportunity to realize a higher than breakeven outcome, which is an encouraging signal for future years.

Should the government entity pursue a new revenue stream that is assessed as a percentage of the gross revenues earned by commercial tenants at the Airport, the net operating income will enable a larger surplus in each year. For example, the aircraft repair and maintenance operation at the Airport has generated an average of \$120,000 annual revenue. At the low end of the percentage fee range (5 percent) fee, this would yield \$6,000 of additional revenue to the government entity. Other percentage of gross revenue can be realized from the remaining commercial businesses at the Airport and potentially new tenants that are attracted to the site.

SUSSEX AIR SHOW

The Sussex Airport is the home of the Sussex Air Show, which gained national recognition and attracted high caliber aviator performers and drew large audiences on a near yearly basis between 1966 and 2004. Anecdotal information suggests that in its prime years, the Air Show attracted as many as 20,000 spectators over a weekend period that paid an entrance fee to see world-class air show pilots demonstrate their skills in aerobatic aircraft. Public interest in air shows that feature general aviation aircraft has rebounded recently according to the International Council of Air Shows. They report that families are looking for entertainment that does not require extensive travel and that offer high quality entertainment at moderate prices. Although attendees may be first-timers, there is a cadre of enthusiasts that will make the effort and travel to see several air shows. Air shows can also build stronger airport/community relations. Consequently, depending on the ownership of the Airport, there may be sufficient potential to revive the Sussex Air Show provided that there are people who are prepared to plan, organize and carry out the event. Oftentimes, the services of an experienced air show director is retained for these purposes. Air shows that feature military precision flight teams draw the largest crowds across the country. However, the airside facilities at Sussex Airport cannot support their operational requirements.



The extent of revenue potential associated with a return of the Sussex Air Show will vary depending on the number of days, and names and number of performing pilots. Additionally, there are opportunities to generate revenues through advertisements placed in the air show program publication and through displays at the Airport. Vendors also participate to sell food and beverages, air show memorabilia, and all things aircraft-related. Air shows at general aviation airports typically include aircraft static displays that, at times, also include antique cars. This broadens the appeal of the event to a larger potential audience. The party that organizes, manages and advertises and takes full responsibility for the air show expenses receives the revenues that are generated. If that is an outside contractor, the Airport owner benefits from the sales of fuel and other services provided to the aircraft that participate or otherwise use the Airport during the air show event. The FAA should be consulted with respect to the use of revenues from air shows in order to avoid conflicts with revenue diversion policies.

CAPITAL FUNDING REQUIREMENTS

Chapter 4 presented the Airport capital improvements and establishment costs required during the 20-year forecast horizon. Each Airport ownership and management option presented above benefits from the ability to receive federal and state grant funding because of the Airport's status as a general aviation reliever facility. Excluding the cost of acquiring the Airport, for which only the private ownership and management scenario cannot receive federal and state grant funding, the bulk of the local share of project cost is associated with the required terminal area facilities. The capital investment in these facilities and the local share of eligible projects can vary depending on how much is made the responsibility of the Airport tenants. The total local share of the 20-year capital improvement program can range between \$924,750 and \$3,339,750, which sums include the cost to construct a new terminal building and is applicable to each Airport ownership and management scenario. The great majority of the capital investment program occurs during the first 10-years and the local share can account for between \$906,125 and \$3,001,125. The ownership and management scenarios each provide for the current Airport tenants to finance and construct new, replacement facilities for their operations. Although those costs are not included in the evaluation of capital funding requirements, ground rental income from these tenants is incorporated into each of the pro formas of net operating income.



Maintaining the Airport in private ownership and management (Table 6-3 pro forma) yields the highest cumulative net operating income over the 10-year analysis period (\$1,466,568), say an average of \$146,657 annually. If this amount is applied to amortize a 20-year loan at 6 percent annual interest, the loan amount is about \$1,706,000. Should the lender require an equity investment of 35 percent, for example, the total investment value that can be funded is some \$2,624,600. The operating revenues and expenses shown in Table 6-3 are associated with a capital investment requirement of \$2,766,125 in the first 10 years, which excludes the costs of Airport acquisition. Consequently, it is unlikely that the private ownership and management scenario is financially viable unless a greater portion of the capital investment is shifted to the Airport tenants. This transfer of investment requirement will reduce the net operating income to the private Airport owner and could result in a similar outcome with respect to financial viability.

The pro forma shown in Table 6-4 applies when the government entity acquires, operates and manages the Airport. Current Airport tenants are to finance and replace their existing terminal area facilities under this scenario. Therefore, the local share of the 10-year capital improvement

cost to the government entity is \$2,766,125. This sum excludes the cost of acquiring the Airport, for which the local share is 2.5 percent. Should the government entity finance the 10-year capital cost with a general obligation bond at an interest rate of 4 percent over a 20-year period, the annual debt service without coverage requirement is \$201,146. This financing requirement exceeds the annual net operating income that averages \$57,377, suggesting that it is financially not viable. The government entity would need to subsidize the Airport by some \$143,769 annually.

When the government acquires the Airport, assigns daily management functions to an FBO, and limits its capital investment to the demolition or removal of nearly all existing terminal area facilities and all grant-eligible projects, the prospect for financial viability is not positive. The capital investment, excluding the 2.5 percent share of the Airport acquisition cost, over the 10-year period is \$1,026,125. This investment could be financed with a general obligation bond (20-year and 4 percent interest) with an annual debt service without coverage requirement of \$74,618. The average annual net operating income for this scenario is \$1,946, thereby requiring the government entity to subsidize the Airport by an average of \$72,671 annually.

SUMMARY AND FINDINGS

In summary, there are three basic scenarios for continued operation of the Sussex Airport. The first is to do nothing and expect that a new private owner will acquire the Airport and continue operation of the facility. This Airport ownership and management scenario will not ensure the



continuation of the facility as an airport, even though grant assurances made by the current owner and that are transferable to subsequent owner require that the facility remain in an airport use status. The operating revenue stream is insufficient to meet the Airport acquisition, capital and operating costs. This financial outcome will ultimately lead to an

airport operation that essentially complies with grant assurances and possibly allows for some measure of capital investment if made by Airport tenants.

Acquisition of the Airport by a government ensures that the facility continues to function and meet the requirements of an obligated airport. Two options apply under this scenario – operation and daily management by the government unit or assignment of these responsibilities to an FBO. Each option has different financial outcomes, reflecting their attendant risks and rewards. However, neither yields sufficient net operating income to meet the capital investment requirements, thereby necessitating annual subsidy payments by the owning government entity. When the government entity owns the Airport and assigns the daily operations and management responsibilities to an FBO, the annual subsidy (\$72,671) is about one-half of that when it performs the FBO functions.

Numerous iterations of the pro formas for each of the Airport ownership and management scenarios can be performed and will yield differing financial outcomes. These may incorporate additional sources of operating income such as the application of a percent of gross revenue fee to all on-Airport commercial tenants, alternative assignments of capital improvement projects between the Airport owner and tenants, and the possible reinstatement of the Sussex Air Show.

A fine balance may be achieved that could bring the overall Airport financial ownership and management outcome to a breakeven status. The more promising of the scenarios outlined to achieve this result is likely when the government entity is the owner of the Airport, primarily because the acquisition costs are substantially reduced from that applicable to private ownership, operation and management.

A recommendation with respect to the preferred means of owning, managing and operating the Airport is presented in Chapter 8.

Insert Table 6-3

Insert Table 6-4

Insert Table 6-5

Chapter 7

ECONOMIC IMPACT ASSESSMENT

INTRODUCTION

An important decision factor in the acquisition of Sussex Airport is its community economic impact. In recent years, the value of airports has come under increasing scrutiny from government officials and the general public. It is important, therefore, that the public and its representatives understand the economic significance of the Airport prior to a discussion of purchasing the facility.

All across the nation, and particularly in the Northeast, there exists a negative attitude toward aviation development and growth in general. These attitudes have many causes but environmental concerns and quality of life issues lead the list. Negative perceptions of environmental consequences of airports, in many instances, are driven by experience with large airline airports rather than small general aviation facilities. For these smaller airports, the perceptions are generally worse than the reality. Yet these airports often support existing industries and jobs, stimulate new industry entry and generally contribute to the standard of living for the residents of a particular area. Thus, small general aviation airports are pegged with over-negative perceptions of environmental impact, while at the same time they are not credited with their full economic contributions to the community.

Although contacts with possible users of the Sussex Airport as presented in Chapter 3 indicated limited use of the facilities by themselves or visitors, there was recognition that the access afforded to those outside the area should be promoted. This, in turn, could generate more utilization of the Airport in the future. In general, airports enable such activities as:

- Access to the national air transportation system
- Transshipment of equipment, supplies and personnel
- Emergency response
- Shipment of time-sensitive items

ECONOMIC IMPACT ASSESSMENT

The economic impact of an airport like any other business can be measured in terms of direct, and indirect spending, and their induced benefits. In general, direct spending includes those of on-airport businesses for employment, operations, taxes and capital projects. Indirect spending includes that by visitors arriving by air for their associated needs in the local community. Induced benefits are impacts created by the successive rounds of spending in the local economy until the original direct or indirect impact has been incrementally exported from the local area. Additionally, there are non-monetary impacts attributable to an airport that should be considered in assessing the value of the facility to the community.



Airport Operating Expenses (Direct Impact)

The Airport serves as a base of employment for several businesses. Data from the primary user, the current Airport owner, is available and is otherwise included in Chapter 6. This data includes operating expenses and is complemented with estimates of visitor spending. In summary, the Airport owner spent an average of \$488,452 in salaries, supplies, utilities, and other items to operate the facilities, and for sales taxes and real estate property taxes. The majority of these expenses, estimated at \$400,000, were paid to local area businesses. This is a conservative value inasmuch as annual expenditures made by other Airport tenants are not included.

Visitor Spending (Indirect Impact)

Information taken from the "2009 New Jersey Governor's Conference on Tourism" report was used to estimate airport visitor expenditures in Sussex County indicated average visitor direct spending of \$548 per visit for accommodations, entertainment, meals, shopping and transportation. This survey covered all of New Jersey and the information may be used as an estimating tool for Sussex Airport. This amount includes expenditures by visitors who spend money at local hotels, restaurants, travel agencies, and other businesses during their trips to New Jersey. This visitor-day value includes spending in such high-attraction tourist areas as Atlantic City and the Jersey Shore. Therefore, it was estimated with input from the Sussex Chamber of Commerce that a more appropriate value for visitor spending in the Skylands region was 75 percent of that value, or \$411 per visitor-day.

The method for determining spending by visitors using Sussex Airport was based on an adaptation of the Aircraft Owners and Pilots Association method described as Module #2 in their publication "What's Your Airport Worth?" Essentially, this method first estimates the number of visitors to an airport. Then, an estimated expenditure per visitor is applied to the total number of visitors thereby enabling a quantification of indirect economic impacts. To estimate the number of general aviation visitors to Sussex Airport, it was assumed that only the transient pilots and passengers would be counted as visitors. The true number of visitors was conservatively estimated by assuming that 25 percent of itinerant arrivals are conducted by true transient aircraft; the remaining 75 percent are conducted by aircraft based at the Airport. The FAA estimates that, on average, there are 2.5 occupants aboard each general aviation flight including the pilot. Using these values and the estimated 19,257 annual aircraft operations (9,628 annual arrivals) that occurred in 2008, it was calculated that 2,400 visitors used the Airport in 2008. Based on an average spending level of \$411, the indirect economic impact of these visitors was estimated as \$986,400 in 2008.

Sussex Air Show

A return of the Sussex Air Show will also contribute to indirect economic benefits attributable to the Airport. It is likely that most spectators will be drawn from the local area; however, they will be purchasers of food and other amenities during their visit. They may also link the air show with other recreational amenities available in the region, such as watching the Sussex Skyhawks minor league baseball team taking on an opponent at the nearby Skylands Park. Air show performers and their support teams typically arrive a day or two earlier in order to practice and prepare for their events. They, and possibly those spectators arriving from more distant originations, will generate spending on lodging, meals and ground transportation in the local area to the extent that they are not guests of local area residents or those organizing the event.

The economic impact of the Sussex Air Show has not been included in this assessment because there is no assurance that it will return to the Airport. However, this is a prime example of how an airport and its unique features can be utilized to contribute to the local economy.

Induced Impacts

Induced economic impacts are the multiplied effects of the direct and indirect impacts. Induced impacts are created by the successive rounds of spending in the local economy until the original direct or indirect impact has been incrementally exported from the local area. Thus, the economic impacts of aviation can be felt in parts of Sussex County's economy that are far removed from aviation. Studies have shown that a dollar spent will create at least another in regional income through the "multiplier effect". Thus, the induced economic impact of the Sussex Airport is the sum of its direct and indirect impacts, which totaled \$1,386,400 in 2008.

Total Economic Impact



The total economic impact of the Sussex Airport is the sum of the direct, indirect and induced economic impacts. In 2008, the total economic impact can be estimated at \$2,772,800. By comparison, the 2007 New Jersey State Airport System Plan estimated the annual economic impact of the Airport at \$5,417,600. This higher value is likely due to the inclusion of direct economic impacts attributable to other Airport tenants (parachute jump operator, radio/avionics shop, and welding shop) and their attendant induced impacts.

By any measure, the economic impact of the Sussex Airport is substantial and a multiple of the cost of operating and maintaining the facility.

NON-MONETARY IMPACTS

There are a number of non-monetary benefits of aviation, in general, that have not been mentioned in this economic impact assessment. Some of these benefits may accrue to the Sussex Airport and include:

- Transportation Benefits – defined as the time saved and cost avoided by travelers who use airports rather than the next best alternative. Sussex Airport provides access to the national air transportation system, together with other airports in the region.
- Stimulation of Business – airports have been shown in other studies to be an important factor in the attraction and siting of new businesses in a community. This is particularly true for businesses that employ 100 employees or more. However, the Sussex Airport has not been a factor for businesses in Sussex County in the past.
- Aeromedical Evacuation (Medevac) – airports often serve as bases for aeromedical evacuation teams or flight services. This life-saving function has intrinsic value that often cannot be adequately quantified. Medevac services are located at the Newton Memorial Hospital and St. Clare's Hospital utilizes the helipad located at the Sussex

Borough Fire Department just north of the Airport. Nonetheless, the Airport offers a medevac capability for fixed wing aircraft.

- Recreation – nationally, about 50 percent of commercial airline travel and 60 percent of general aviation travel is for recreational purposes. Although the resorts located in the Sklyands region of Sussex County have not promoted the use of the Airport as a means of transportation to their facilities, the conduct of this acquisition feasibility study has brought awareness of the Airport as a marketing tool for this purpose.

All of the above factors point to a value of an airport that is not easily quantified. The impacts that were estimated within the body of this report – direct, indirect and induced – are only one facet of the overall picture. Non-monetary impacts add to the overall value of the Airport to the community and should be considered in a decision for public acquisition.

OFF- AIRPORT LAND USE

Economic impacts from off-airport land uses can be significant if they are tied to aviation uses. That is, companies that use airports sometimes locate adjacent to those facilities to enhance their access and overall convenience to vendors. In this regard, it is not unusual to find industrial parks at or near airports, and they are compatible land uses. While not explored in this study, off-Airport land uses that involve the attraction and/or expansion of businesses or industries could be marketed together with the available Airport services.

Chapter 8 FINDINGS AND RECOMMENDATIONS

FINDINGS

Airport Setting

The Sussex Airport has been a part of the fabric of the Township of Wantage for more than 55 years and has demonstrated its staying power through the ups and downs of the general aviation industry. Only recently, due primarily to the nationwide economic downturn that has claimed many established and much larger businesses, has the Airport faced stressful financial circumstances that threaten its viability. Needed capital improvements and routine maintenance have not kept pace with the demands of operating the facility to meet user needs, and this has affected the attractiveness and use of the Airport. The financial management of the Airport, including lease negotiation and management has, in some instances, been contrary to the standards of practice required by the Federal Aviation Administration (FAA) for obligated airports, which are defined as those accepting federal grants for airport planning, land and aviation easement acquisition, and capital projects. The Airport has benefited from its status as a designated general aviation reliever airport through its ability to receive these grants, which are financed by users of the national air transportation system through fees and taxes.



Notwithstanding the current situation facing the Airport, it is home to 137 aircraft, 48 of which are hangared in attractive, off-Airport facilities. The airside features of the Airport provide reasonable levels of service and utility to based and transient aircraft. Landside facilities are operating at beyond their useful lives, need replacement, and do not make a good first impression on users who arrive by air, as well as the local population. Overall, the Airport offers a higher level of operational service than most of the other airports with which it competes in the region. The majority

of Airport users, both based and transient, are recreational pilots. However, there is business use by some based aircraft owners and by those that visit the region from more distant originations.

The service area of the Airport is characterized by a relatively stable and growing population base. Employment opportunities are centered in retail trade, services (predominantly health care and social assistance) sectors. This is in keeping with the rural character preferred by those who live in northwestern New Jersey. Disposable household income levels are comparatively high, which facilitates the use of aircraft for personal transportation.

Ownership, Management and Operations Scenarios

The sale of the Airport to the private or public sector has been an objective of the Airport owner for several years. Grant assurances agreed to by the Airport owner require that the Airport remain in aeronautical use irrespective of the type of purchaser. Consequently, the basic question that has prompted this acquisition feasibility study is whether the Township of Wantage, as a first option, or another government unit should take action to own, operate and manage the Airport. Continued ownership by the private sector is another option. Government

ownership also generates options as to the extent of operations and management controls that may be exercised.

From the financial perspective, which dominates the acquisition question, the Airport appears to have been operating profitably. This is based on unaudited data provided by the current Airport owner. However, the data is consistent, albeit at lower operating revenue levels on a per based aircraft basis with those at similar privately-owned airports or publicly-owned airports of comparable character. Annual surpluses have, however, not been used to fund improvements to the Airport and the terminal area in particular.

Continued ownership, operation and management of the Airport by the private sector has the potential to yield the highest net operating income (operating revenue less operating expenses), but is insufficient to meet short- and long-term capital improvement costs, and the costs of acquiring the Airport. The Airport can continue to operate, but the level of service will deteriorate as the existing infrastructure ages and becomes less attractive to users.

Private airport ownership is dependent on attracting entrepreneurs to acquire, operate and manage the Airport facilities and to assume the responsibilities associated with an obligated airport. The risks inherent in any business venture add to this challenge.



Public ownership also enables access to federal and state funding grants for eligible projects. Although higher net operating incomes can accrue to the owning government entity, there is a need for a subsidy to pay for capital improvements that dominate the first 10 years development program. The average annual subsidy is on the order of \$144,000. Shifting the responsibility of daily management and maintenance, and financing most new terminal area facilities to a fixed base operator results in a lower net operating income to the government entity. Nonetheless, the Airport will continue to be subsidized by some \$73,000 annually. Although the FBO management and operation scenario is relatively more attractive under the government entity ownership scenario, there may be a challenge to find an FBO that can support and agree to the financial commitment required.

RECOMMENDATIONS

Ownership

Aside from the fact that as an obligated facility the Airport must remain in operation to satisfy federal regulations, there is merit in continuing to improve the facility to meet user demands. Of the ownership, operations and management scenarios evaluated, the government entity form is recommended. It offers the most promising financial outcome, albeit requiring public subsidy. Public ownership ensures that the Airport is best positioned to receive federal and state grants for eligible projects and that action taken to improve the Airport gains public acceptance. The use of general obligation bonds may be required and can only be supported by a public that recognizes the value of the services provided by the Airport. Public financing also offers lower total capital investment cost for the facility improvements. Opportunities exist to meld the Airport into other economic development programs in the community and region, and there are synergies that can be exploited to enhance the attraction and use of the Airport by local area businesses, especially those engaged in tourism.

It is recommended that the government entity to assume ownership of the Airport is the Township of Wantage. The Airport is located in the Township and it receives the current property taxes. Although this revenue will be lost upon taking ownership, the Township obtains the ability to manage and control the activities that are undertaken at the Airport.

Airport Management and Operation



The Township of Wantage is not currently positioned to assume daily operation and management functions of the Airport. This activity will require the retention of skilled staff and Township financial resources that may find better application in other Township endeavors. Rather, a lease agreement with an experienced and knowledgeable fixed base operator (FBO) is a preferable course of action. The lease agreement should require a mix of capital investment in new facilities by the Township and the FBO and can be structured to allow for a viable business enterprise to function. The pro forma for this ownership and management scenario demonstrates that the Airport will require financial subsidization by the Township. Negotiations between the Township and the FBO can lead to an equitable arrangement that offers opportunity for each party to meet its operating and financial objectives, and public responsibilities. This will likely result in a new pro forma that will be in the range set by the two government entity ownership options evaluated.

The Township is not alone in engaging in this type of public action. Many airports across the country are responding positively in meeting the needs of air transportation for their residents and businesses and most do not realize net operating incomes after capital expenses and debt service requirements. However, the value of an airport and the economic benefits that it can generate are recognized and offset the operating subsidies that are needed. Prudent management can lead to a totally self-sufficient airport operation in the long-term. This may be particularly relevant for Sussex Airport and the Township of Wantage after the 10-year capital improvement program is implemented. These initial years are intended to bring the Airport facilities to an acceptable level of service. Thereafter, the improvements will track more closely with recognized and reliable user demand indicators and yield returns commensurate with the capital investment.

Airport Oversight

The Township can appoint an airport commission or board to provide policy input and oversee the operation of the Airport. This commission should be comprised of Township residents that represent the businesses and local residents served by the Airport and who have an active interest in the well-being of the Airport. It is not necessary that commission members be active pilots; however, such skills can be valuable in the conduct of the business of the commission. The commission should be comprised of a reasonable number of members who may elect a chairperson, secretary and treasurer or these positions can be determined by appointment. Commission members should serve on staggered terms of at least three years and be eligible for reappointment.

The airport commission acts in an advisory role to the Governing Body of the Township of Wantage, which should set the overall policy for the management, operation and development of the Airport. The commission is then charged with carrying out those responsibilities in the best interest of the public. The Governing Body should allocate a budget for the Airport in concert with input from the commission that reflects anticipated operating revenue, expenses and capital costs. The commission is then responsible to the Governing Body for budget control and management. Meetings of the airport commission should be held on a regular monthly basis, and open to the public. Minutes of commission meetings should be filed with the Governing Body.

Daily Airport Management

The airport commission should assign day-to-day management and operation of the Airport to the FBO. The fixed base operator/airport manager role is subject to conflicts of interest, especially when more than one FBO is located at an airport. The FBO is focused on operating his/her business at a profit. The airport management role is to provide a high level of service to all users and represent the financial interests of the owning agency. This conflict can be eliminated when the Township and the FBO execute two separate agreements. The first establishes the lease for specific areas of the airport from which the FBO conducts his/her business. The second is a management contract that specifies the duties and responsibilities of the airport management function. It is then incumbent upon the airport commission, acting for the Governing Body, to ensure that both agreements are met and enforced.

It is unlikely that there will be sufficient activity at the Airport to justify more than one lease with a fixed base operator. That could change in future years depending on aircraft activity levels. There is currently more than one tenant at the Airport offering commercial services and that is anticipated to continue. The ability to accommodate private sector interest and investment in the Airport in a fair and nonexclusive basis is an important role of the airport commission.

The marketplace will be the filter that eventually sets the tone for the number of tenants seeking to conduct business at the Airport. It is recommended that the Township issue a request for proposals for the fixed base operation. That document should specify the minimum standards for the FBO lease as well as indicate that the operator is to serve as the airport manager under the terms of a separate management agreement. Minimum standards specify the threshold entry requirements for an entity to engage in aeronautical services at the Airport. A range of minimum standards can be identified that are specific for fixed base operators and other types of business activities to be conducted at the Airport. This, in effect, enables the Township to receive responsible proposals for the FBO function that is consistent with the needs of the user community that it seeks to meet and serve at the Airport.



To aid the FBO in its airport management responsibilities, the Township should also prepare airport rules and regulations that promote the health, safety, interest and welfare of the public in general and the operators, lessees, tenants, consumers and users of the Airport in particular with respect to the safe, orderly and efficient use of the facility.

Summary

In summary, ownership of the Airport by the Township of Wantage and the appointment of an airport commission or board addresses the following key responsibilities associated with the Airport:

- Maintain safe and serviceable facilities
- Provide for needed services and facilities
- Control airport finances
- Preserve the public trust

The assignment of day-to-day management of the Airport to the FBO is the most efficient means to accomplish this public responsibility. Oversight of this activity by an airport commission or board serves to ensure that the interests of the Township are being served diligently and that the aviation needs of the users are being responsibly met.

NEXT STEPS

Assuming that the Governing Body concurs with the recommendation to pursue the acquisition of the Sussex Airport, there is a host of action items that need to be accomplished. The first of these is due diligence with respect to the legal status of the Airport and its owner. The findings made during this process that can lead to a decision to continue or discontinue the acquisition process. Thereafter, the next series of action items are anticipated, some of which may be conducted concurrently.

Due Diligence

The activities encompassing the due diligence initiative include:

- Property title search
- Property boundary survey
- Phase I environmental surveys of the property and activity areas
- Property appraisal
- Review and understanding of federal grant assurances



The next round of go/no-go decision making by the Township follows the due diligence effort and leads to the property acquisition stage. This decision should solicit public input during an open meeting.

Formation of Airport Commission

At this stage of the Township's involvement in the acquisition of the Airport, it would be useful to form the Airport Commission in order that they may take the lead role in the next series of implementation actions and advise and seek the concurrence of the Governing Body.

Property Acquisition

Acquisition of the Airport will involve such actions as:

- Agreement on the specific land area and improvements to be acquired
- Acquisition price
- Preparation of the property map, generally referred to by the FAA as Exhibit A
- Submittal of federal and state grant applications

Outside Professional Assistance

It is likely that once the decision is made to acquire the Airport, the Township will need the services of an airport consultancy(s) to carry out the next series of activities. In fact, airport consultant services will be needed in the due diligence and property acquisition activities listed above. The Airport Commission selects these consultants through a qualifications-based procedure and recommends them for approval to the Governing Body. There is federal guidance on the means by which airport consultants are selected. This ensures that their services for the projects they plan, design and help implement are grant-eligible.



Airport Plan Drawings and Capital Improvement Plan

The airport planning process sets the level of facilities that will be required in the short- and long-term to meet anticipated user demands. This acquisition feasibility study provides much of the input to the preparation of these plan drawings, which include in addition to the Exhibit A:

- Airport layout plan
- Airspace plan
- Inner approach and runway profile plan
- Off-Airport land use plan

The specifications for these plan drawings are well established by the FAA in its series of advisory circulars. It is possible that the set of airport layout plan drawings prepared in 2001 can serve as a base to prepare updated versions that reflect the findings in this acquisition feasibility study.

A capital improvement plan, a prioritized listing of capital projects and costs should accompany the submittal of the plan drawings to the FAA and State for their approval. Such approval does not obligate these agencies to participate in the implementation program, but is necessary to receive future grant awards. Each grant application is subject to evaluation of its merits on a case-by-case basis.

Airport Commission Activities

The Airport Commission can initiate the following action items concurrent with the preparation of the Airport Plan Drawings and Capital Improvement Plan. Each of these items involves the development of:

- Airport Minimum Standards
- Airport Rules and Regulations
- FBO request for proposals – operation of the Airport
- FBO request for proposals – management of the Airport

Following these items, the Commission should entertain the proposals evaluation including interviews toward the FBO selection. This is followed by negotiation of the lease and management agreements for recommendation to the Governing Body.

Grant Applications

The Township, with the assistance of its airports consultants, should initiate the grant application to the FAA and State for those projects identified in the first phase of the capital improvement plan. Some projects may require the completion of an environmental assessment. The FAA and State should be consulted on the need for and level of environmental studies required, if any.

Tenant and User Agreements

The Airport Commission should negotiate lease agreements with the current Airport tenants and the off-Airport T-hangar operator. These leases may need to incorporate the applicable terms and conditions negotiated for the FBO operations and management functions.

Airport Operation

During the action items listed above, the Airport will have been operating under its current ownership and tenant relations. When the Township assumes ownership, there is likely to be a continuation of the written and verbal agreements in place until such time that it can finalize the necessary items to achieve total control and management of the Airport as recommended in this acquisition feasibility study. Completion of these action items is likely to take a year or two. After that, the Airport should be operating and managed as deemed most appropriate by the Township of Wantage.



Table 3-2 (continued)
AREA AIRPORTS COMPETITIVE STATUS

Item	AREA AIRPORTS						
	Sussex Airport	Lincoln Park	Morristown Municipal	Newton	Stroudsburg-Pocono	Trinca	Warwick Municipal
Ownership	Private	Private	Public	Private	Private	Public	Public
Runway Length x Width	3499 x 75	2942 x 50	5999 x 150 3998 x 150	2546 x 45	3087 x 30	1934 x 135	2150 x 28 2250 x 80 2100 x 50
Displaced Landing Threshold	RW 3 - 457 RW 21 - 750	RW 1 - 840 RW 19 - 260	None	None	RW 8 - 100 RW 26 - 770	None	None
Runway Surface	Paved	Paved	Paved Paved	Paved	Paved	Turf	Paved Turf Turf
Runway Lighting	MIRL	MIRL	HIRL / MIRL	None	LIRL	None	LIRL / None / None
Instrument Approach	Nonprecision	Nonprecision	Precision	None	Nonprecision	None	None
Based Aircraft	137	150 est.	240 est.	17 est.	34 est.	10 est.	47 est.
Tiedown Fees (\$ / month)							
Based - paved	75	175	195 - 350	NA	105	70	75
Based - turf	75	NA	NA	60	65	70	NA
Transient	3 / day	10 / night*	10 - 195 / night*	None	5 / night*	None	None
Handling Fee (per transient)	None	None	28 - 721	None	None	None	None
Hnagar Storage (spaces)							
T-Hangar	54 (53 off-Airport)	20	24	10	8	0	11
Community	14	60	100	0	2	4	4
Hangar Fees (\$ / month)							
T-Hangar	250	550	800 - 1000	NA	200	NA	140
Community	100 - 200	550	420 - 1700	90	325	155 - 250	150
Spaces available	No	No	Yes	No	10	No	No
Waiting List (number)	Yes (5)	Yes (3)	No	No	No	No	Yes (5)
Landing Fee	None	No	11 - 200	No	No	No	No
Fuel (\$/gal)							
Avgas	3.74	4.50	4.53	NA	NA	NA	3.85
Jet-A	4.50	Pending	3.62	NA	NA	NA	NA
Services							
Flight training	Yes	Yes	Yes	No	Yes	No	No
Major maintenance	Yes	Yes	Yes	No	Yes	Minor	No
Light maintenance	Yes	Yes	Yes	No	Yes	Minor	No
Special	Avionics, Parachute Jump	Avionics	Avionics, Customs	No	Avionics, Glider, Upholstery, Medevac	No	No
Hours of Operation	24-Hour	0800 - Dusk	24-Hour	Daylight	24-Hour	Closed Sunset to Sunrise	Closed to Transient Sunset to Sunrise

* Waived if fuel is purchased.

**Table 3-2
AREA AIRPORTS COMPETITIVE STATUS**

Item	AREA AIRPORTS					
	Sussex Airport	Aeroplex-Andover	Blairstown	Essex County	Greenwood Lake	Hackettstown
Ownership	Private	Public	Private	Public	Public	Private
Runway Length x Width	3499 x 75	1981 x 50	3100 x 70	4553 x 80 3721 x 75	3470 x 60	2200 x 50
Displaced Landing Threshold	RW 3 - 457 RW 21 - 750	None	RW 7 - 296 RW 25 - 246	RW 4 - 371 RW 22 - 135 RW 10 - 166 RW 28 - 825	None	None
Runway Surface	Paved	Paved	Paved	Paved Paved	Paved	Paved
Runway Lighting	MIRL	MIRL	MIRL	HIRL / MIRL	MIRL	None
Instrument Approach	Nonprecision	Nonprecision	Nonprecision	Nonprecision	Nonprecision	None
Based Aircraft	137	53 est.	120 est.	300 est	90 est.	36 est.
Tiedown Fees (\$ / month)						
Based - paved	75	NA	90	180 - 257	120	--
Based - turf	75	70	75	None	80	--
Transient	3 / day	None	15 / night*	18 - 60 / night*	10 / night*	--
Handling Fee (per transient)	None	None	None	None	None	None
Hnagar Storage (spaces)						
T-Hangar	54 (53 off-Airport)	0	80	89	52	0
Community	14	9	5	25	2	NA
Hangar Fees (\$ / month)						
T-Hangar	250	NA	350	670 - 925	475 - 550	NA
Community	100 - 200	250	500	1300 - 6000	525	--
Spaces available	No	No	2	No	No	--
Waiting List (number)	Yes (5)	Yes (5)	No	Yes (120)	Yes (22)	--
Landing Fee	None	No	No	10 - 50	No	--
Fuel (\$/gal)						
Avgas	3.74	3.80	3.54	4.57	3.69- 3.89	4.70
Jet-A	4.50	NA	NA	3.45	NA	NA
Services						
Number of FBOs	1	1	1	2		1
Flight training	Yes	Yes	Yes	Yes	Yes	Yes
Major maintenance	Yes	Yes	Yes	Yes	Yes	No
Minor maintenance	Yes	Yes	Yes	Yes	Yes	Yes
Special	Avionics, Parachute Jump	No	Avionics, Glider	Avionics	No	No
Hours of Operation	24-Hour	Prior Permission for Night Transient	24-Hour	24-Hour	24-Hour	Sunrise to Sunset

* Waived if fuel is purchased.

**Table 4-1
SUSSEX AIRPORT CAPITAL IMPROVEMENTS COST**

Capital Improvement Project	Cost (\$)			
	Federal	State	Wantage	Total
Years 1 through 5				
Demolish house in RW 3 approach, relocate tenant, re-mark RW threshold	38,000	1,000	1,000	40,000
Bury All Powerlines in RW 21 Approach (450')	23,750	625	625	25,000
Construct north parallel TW (2,350' x 25') and TW exits	769,500	20,250	20,250	810,000
Acquire avigation easement for RW 3 RPZ (6.7 acres)	71,250	1,875	1,875	75,000
Acquire avigation easement for RW 21 RPZ (6.6 acres)	66,500	1,750	1,750	70,000
Demolish terminal building	0	0	45,000	45,000
Demolish maintenance hangar	0	0	20,000	20,000
Demolish 6-unit T-hangar	0	0	25,000	25,000
Demolish 1-unit T-hangar	0	0	5,000	5,000
Remove two modular trailer office facilities	0	0	5,000	5,000
Demolish Quonset hangar and support structures	0	0	20,000	20,000
Construct new terminal building (4,000 sf)	0	0	600,000	600,000
Construct 12 T-hangars	0	0	830,000	830,000
Rehabilitate transient apron (13,000 sy)	641,250	16,875	16,875	675,000
Construct north apron (16,000 sy)	1,415,500	37,250	37,250	1,490,000
Construct expanded transient apron (3,000 sy)	223,250	5,875	5,875	235,000
Acquire Airport maintenance vehicles (plow, mower, backhoe and dump truck)	142,500	3,750	128,750	275,000
Subtotal	3,391,500	89,250	1,764,250	5,245,000
Years 6 through 10				
Monitor underground fuel storage tanks, fill if applicable, and install two aboveground tanks (10,000 gallons each)	0	285,000	15,000	300,000
Rehabilitate RW (3,499' x 75') and Re-mark RW	1,738,500	45,750	45,750	1,830,000
Replace RW edge lighting and regulators	304,000	8,000	8,000	320,000
Upgrade PAPI-2 to PAPI-4 on RW 3	57,000	1,500	1,500	60,000
Install PAPI-4 on RW 21	57,000	1,500	1,500	60,000
Replace REIL on RW 3 and RW 21	47,500	1,250	1,250	50,000
Install TW edge reflectors for entire length and exits	9,500	250	250	10,000
Acquire two 6,000 gallon fuel trucks for avgas and Jet-A	0	0	80,000	80,000
Construct 12 T-hangars	0	0	830,000	830,000
Construct expanded north apron (8,000 sy)	707,750	18,625	18,625	745,000
Subtotal	2,921,250	361,875	1,001,875	4,285,000
Years 11 through 20				
Construct 8 T-hangars	0	0	555,000	555,000
Construct expanded north apron (8,000 sy)	707,750	18,625	18,625	745,000
Subtotal	707,750	18,625	573,625	1,300,000
TOTAL	7,020,500	469,750	3,339,750	10,830,000

Notes:

1. Costs include engineering design fees and services during construction.
2. Federal share of eligible project costs is 95 percent.
3. State share of eligible project costs is 2.5 percent.
4. Township of Wantage share of eligible project cost is 2.5 percent; otherwise, 100 percent if not achieved through the private sector.

**Table 6-3
BASELINE PRO FORMA -- CURRENT FBO (PRIVATE OWNERSHIP AND MANAGEMENT)**

Operating Revenues	Recent Years' Average	Calendar Year										
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Aircraft Tiedowns	72,900	72,900	75,452	78,092	80,826	83,654	86,582	89,613	92,749	95,995	99,355	102,832
6-Unit T-Hangar	7,200	7,200	7,452	7,713	7,983	8,262	8,851	9,160	9,483	9,813	10,157	10,512
1-Unit T-Hangar	3,000	3,000	3,105	3,214	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
1-Unit Corner Hangar	4,200	4,200	4,347	4,499	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
1-Unit Conventional Hangar	2,400	2,400	2,484	2,571	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Quoset Hangar	6,000	6,000	6,210	6,427	5,322	5,508	6,106	6,320	6,542	6,770	7,018	7,252
Pitts Hangar	3,600	3,600	3,726	3,856	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Off-Airport T-Hangars	5,760	5,760	46,277	47,897	49,573	51,308	53,104	54,962	56,886	58,877	60,938	63,071
New 12-Unit T-Hangar Facility	0	0	0	0	0	0	57,600	59,616	61,703	63,862	66,097	68,411
New 12-Unit T-Hangar Facility	0	0	0	0	0	0	0	0	0	0	0	68,411
Parachute Jump Operator	24,000	24,000	24,840	25,709	10,644	11,017	11,402	11,801	12,214	12,642	13,084	13,542
Radio / Avionics Shop	9,000	9,000	9,315	9,641	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Welding Shop	3,600	3,600	3,726	3,856	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Fabric Tent Storage Facility	4,200	4,200	4,347	4,499	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Aircraft Maintenance Shop	120,000	4,800	4,968	5,142	5,322	5,508	5,700	5,900	6,106	6,320	6,542	6,770
Billboard	1,200	1,200	1,242	1,285	1,330	1,377	1,425	1,475	1,527	1,580	1,635	1,693
100 Low Lead Fuel	240,000	240,000	252,021	266,504	279,716	293,527	307,962	325,202	341,042	357,592	377,271	395,419
Jet-A Fuel	42,500	42,500	44,630	47,189	49,528	51,974	54,530	57,583	60,388	63,319	66,803	70,017
Total Operating Revenue	549,560	434,360	494,142	518,094	508,871	531,413	613,212	642,282	670,011	698,890	731,797	831,625
Operating Expenses												
Salary Cost	130,000	41,000	42,025	43,076	73,588	75,428	77,313	79,246	113,718	116,561	119,475	122,462
Real Estate Property Taxes	40,152	40,152	30,644	31,717	32,827	33,976	35,165	36,396	37,669	38,988	40,352	41,765
Liability Insurance	12,000	12,000	12,840	13,739	14,701	15,730	16,831	18,009	19,269	20,618	22,062	23,606
Electric Utility	24,400	24,400	25,254	26,138	27,053	28,000	28,980	29,994	31,044	32,130	33,255	34,419
Fuel Oil	5,000	5,000	5,175	5,356	5,544	5,738	5,938	6,146	6,361	6,584	6,815	7,053
Equipment Fuel	1,400	1,400	1,449	1,500	1,552	1,607	1,663	1,721	1,781	1,844	1,908	1,975
State Sales Tax	9,000	0	0	0	0	0	0	0	0	0	0	0
Aircraft Shop Parts	40,000	0	0	0	0	0	0	0	0	0	0	0
Equipment Maintenance	8,000	8,000	8,280	8,570	8,870	9,180	9,501	9,834	10,178	10,534	10,903	11,285
Telephone	4,800	4,800	4,968	5,142	5,322	5,508	5,701	5,900	6,107	6,321	6,542	6,771
Office Supplies	1,200	1,200	1,242	1,285	1,330	1,377	1,425	1,475	1,527	1,580	1,635	1,693
100 Low Lead Fuel	180,000	180,000	189,039	199,878	209,787	220,145	230,972	243,901	255,781	268,194	282,954	296,564
Jet-A Fuel	32,500	32,500	34,129	36,086	37,875	39,745	41,700	44,034	46,179	48,420	51,085	53,542
Total Operating Expenses	488,452	350,452	355,045	372,487	418,449	436,434	455,189	476,656	529,614	551,774	576,986	601,135
Net Operating Income	61,108	83,908	139,097	145,607	90,422	94,979	158,023	165,626	140,397	147,116	154,811	230,490

**Table 6-4
GOVERNMENT ENTITY PROVIDING FBO AND MANAGEMENT SERVICES PRO FORMA**

Operating Revenues	Recent Years' Average	Calendar Year										
		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Aircraft Tiedowns	72,900	72,900	75,452	78,092	80,826	83,654	86,582	89,613	92,749	95,995	99,355	102,832
6-Unit T-Hangar	7,200	7,200	7,452	7,713	7,983	8,262	8,851	9,160	9,483	9,813	10,157	10,512
1-Unit T-Hangar	3,000	3,000	3,105	3,214	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
1-Unit Corner Hangar	4,200	4,200	4,347	4,499	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
1-Unit Conventional Hangar	2,400	2,400	2,484	2,571	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Quoset Hangar	6,000	6,000	6,210	6,427	5,322	5,508	6,106	6,320	6,542	6,770	7,018	7,252
Pitts Hangar	3,600	3,600	3,726	3,856	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Off-Airport T-Hangars	5,760	5,760	46,277	47,897	49,573	51,308	53,104	54,962	56,886	58,877	60,938	63,071
New 12-Unit T-Hangar Facility	0	0	0	0	0	0	57,600	59,616	61,703	63,862	66,097	68,411
New 12-Unit T-Hangar Facility	0	0	0	0	0	0	0	0	0	0	0	68,411
Parachute Jump Operator	24,000	24,000	24,840	25,709	10,644	11,017	11,402	11,801	12,214	12,642	13,084	13,542
Radio / Avionics Shop	9,000	9,000	9,315	9,641	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Welding Shop	3,600	3,600	3,726	3,856	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Fabric Tent Storage Facility	4,200	4,200	4,347	4,499	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Aircraft Maintenance Shop	120,000	4,800	4,968	5,142	5,322	5,508	5,700	5,900	6,106	6,320	6,542	6,770
Billboard	1,200	1,200	1,242	1,285	1,330	1,377	1,425	1,475	1,527	1,580	1,635	1,693
100 Low Lead Fuel	240,000	240,000	252,021	266,504	279,716	293,527	307,962	325,202	341,042	357,592	377,271	395,419
Jet-A Fuel	42,500	42,500	44,630	47,189	49,528	51,974	54,530	57,583	60,388	63,319	66,803	70,017
Total Operating Revenue	549,560	434,360	494,142	518,094	508,871	531,413	613,212	642,282	670,011	698,890	731,797	831,625
Operating Expenses												
Salary Cost	130,000	130,000	175,500	179,888	184,385	188,994	193,719	198,562	203,526	208,614	213,830	218,175
Real Estate Property Taxes	40,152	40,152	0	0	0	0	0	0	0	0	0	0
Liability Insurance	12,000	12,000	12,840	13,739	14,701	15,730	16,831	18,009	19,269	20,618	22,062	23,606
Electric Utility	24,400	24,400	25,254	26,138	27,053	28,000	28,980	29,994	31,044	32,130	33,255	34,419
Fuel Oil	5,000	5,000	5,175	5,356	5,544	5,738	5,938	6,146	6,361	6,584	6,815	7,053
Equipment Fuel	1,400	1,400	1,449	1,500	1,552	1,607	1,663	1,721	1,781	1,844	1,908	1,975
State Sales Tax	9,000	0	0	0	0	0	0	0	0	0	0	0
Aircraft Shop Parts	40,000	0	0	0	0	0	0	0	0	0	0	0
Equipment Maintenance	8,000	8,000	8,280	8,570	8,870	9,180	9,501	9,834	10,178	10,534	10,903	11,285
Telephone	4,800	4,800	4,968	5,142	5,322	5,508	5,701	5,900	6,107	6,321	6,542	6,771
Office Supplies	1,200	1,200	1,242	1,285	1,330	1,377	1,425	1,475	1,527	1,580	1,635	1,693
Professional Services	0	0	25,000	10,000	10,000	10,000	35,000	12,000	12,000	12,000	12,000	12,000
100 Low Lead Fuel	180,000	180,000	189,039	199,878	209,787	220,145	230,972	243,901	255,781	268,194	282,954	296,564
Jet-A Fuel	32,500	32,500	34,129	36,086	37,875	39,745	41,700	44,034	46,179	48,420	51,085	53,542
Total Operating Expenses	488,452	439,452	482,876	487,582	506,419	526,024	571,430	571,576	593,753	616,839	642,989	667,083
Net Operating Income (Loss)	61,108	-5,092	11,266	30,512	2,452	5,389	41,782	70,706	76,258	82,051	88,808	164,542

**Table 6-5
GOVERNMENT ENTITY CONTRACTING FBO AND MANAGEMENT SERVICES PRO FORMA**

Operating Revenues	Recent Years' Average	Calendar Year										
		2010	2011	2012	2103	2014	2015	2016	2017	2018	2019	2020
Aircraft Tiedowns	72,900	72,900	0	0	0	0	0	0	0	0	0	0
6-Unit T-Hangar	7,200	7,200	7,452	7,713	7,983	8,262	8,551	8,851	9,160	9,483	9,813	10,156
1-Unit T-Hangar	3,000	3,000	3,105	3,214	3,326	3,443	2,850	2,950	3,053	3,160	3,271	3,385
1-Unit Corner Hangar	4,200	4,200	4,347	4,499	4,657	4,820	2,850	2,950	3,053	3,160	3,271	3,385
1-Unit Conventional Hangar	2,400	2,400	2,484	2,571	2,661	2,754	2,850	2,950	3,053	3,160	3,271	3,385
Quoset Hangar	6,000	6,000	6,210	6,427	6,652	6,885	5,700	5,900	6,106	6,320	6,541	6,770
Pitts Hangar	3,600	3,600	3,726	3,856	3,991	4,131	2,850	2,950	3,053	3,160	3,271	3,385
Off-Airport T-Hangars	5,760	5,760	0	0	0	0	0	0	0	0	0	0
New 12-Unit T-Hangar Facility	0	0	0	0	0	0	17,102	17,702	18,320	18,966	19,626	20,312
New 12-Unit T-Hangar Facility	0	0	0	0	0	0	0	0	0	0	0	20,312
Parachute Jump Operator	24,000	24,000	24,840	25,709	26,609	27,541	11,400	11,799	12,212	12,639	13,082	13,540
Radio / Avionic Shop	9,000	9,000	9,315	9,641	9,978	10,328	2,850	2,950	3,053	3,160	3,271	3,385
Welding Shop	3,600	3,600	3,726	3,856	3,991	4,131	2,850	2,950	3,053	3,160	3,271	3,385
Fabric Tent Storage Facility	4,200	4,200	4,347	4,499	4,657	4,820	2,850	2,950	3,053	3,160	3,271	3,385
Aircraft Maintenance Shop	120,000	120,000	17,823	18,446	19,092	19,760	20,452	21,168	21,909	22,675	23,469	25,291
Billboard	1,200	1,200	1,242	1,285	1,330	1,377	1,425	1,475	1,527	1,580	1,635	1,693
100 Low Lead Fuel Flowage Fee*	240,000	240,000	7,561	7,995	8,391	8,806	9,236	9,756	10,231	10,728	11,318	11,863
Jet-A Fuel Flowage Fee*	42,500	42,500	1,339	1,416	1,486	1,559	1,636	1,727	1,812	1,900	2,004	2,101
Total Operating Revenue	549,560	549,560	97,517	101,127	104,804	108,617	95,452	99,028	102,648	106,411	110,385	135,733
Operating Expenses												
Salary Cost	130,000	130,000	0	0	0	0	0	0	0	0	0	0
FBO Management Fee	0	0	50,000	51,750	53,561	55,436	57,376	59,384	61,463	63,614	65,840	68,145
Real Estate Property Taxes	40,152	40,152	0	0	0	0	0	0	0	0	0	0
Liability Insurance	12,000	12,000	12,840	13,739	14,701	15,730	16,831	18,009	19,269	20,618	22,062	23,606
Electric Utility	24,400	24,400	0	0	0	0	0	0	0	0	0	0
Fuel Oil	5,000	5,000	0	0	0	0	0	0	0	0	0	0
Equipment Fuel	1,400	1,400	0	0	0	0	0	0	0	0	0	0
State Sales Tax	9,000	9,000	0	0	0	0	0	0	0	0	0	0
Aircraft Shop Parts	40,000	40,000	0	0	0	0	0	0	0	0	0	0
Equipment Maintenance	8,000	8,000	8,280	8,570	8,870	9,180	9,501	9,834	10,178	10,534	10,903	11,285
Telephone	4,800	4,800	0	0	0	0	0	0	0	0	0	0
Office Supplies	1,200	1,200	0	0	0	0	0	0	0	0	0	0
Professional Services	0	0	25,000	10,000	10,000	10,000	35,000	12,000	12,000	12,000	12,000	12,000
100 Low Lead Fuel	180,000	180,000	0	0	0	0	0	0	0	0	0	0
Jet-A Fuel	32,500	32,500	0	0	0	0	0	0	0	0	0	0
Total Operating Expenses	488,452	488,452	96,120	84,059	87,132	90,346	118,708	99,227	102,910	106,766	110,805	115,036
Net Operating Income (Loss)	61,108	61,108	1,397	17,068	17,672	18,271	-23,256	-199	-262	-355	-420	20,697

* Fuel flowage fee begins in 2011.