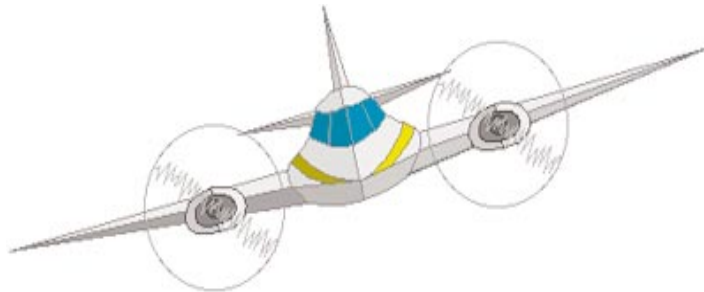


Arlington Municipal Airport: Cost-Benefit Analysis of Alternative Courses of Action for Decision Making



Prepared for:
Town of Arlington
George Horton, Mayor
Don May, Town Superintendent

Prepared by:
Regional Economic Development Center
The University of Memphis

Luchy Burrell
Steve Redding
Sonya Schenk

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Economic Development Administration

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Regional Economic Development Center
Graduate Program in City and Regional Planning
The University of Memphis
226 Johnson Hall
Memphis, TN 38152

Tel. 901-678-2056
Fax. 901-678-4162

e-mail address: lburrell@cc.memphis.edu
Web Site: <http://planning.memphis.edu/redcplan>

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Executive Summary

Five possible alternatives have been examined by the Regional Economic Development Center (REDC) regarding the future of the Arlington Municipal Airport.

Alternative 1--Continue present operations without the recommended capital improvements

- The first alternative shows that the airport is a break-even or slight loss for the Town's budget. If revenues continue to increase as they have over the past five years, the return to the Town will increase but not dramatically. Some minimal repairs to the runway may be required, but the Town can still operate and receive 50% maintenance funding from the State.

Alternative 2--Continue operations at a reduced level without the FBO

- The second alternative proved to be a more dramatic loss to the Town as operations were likely to be reduced with a reduction in services and hours of operation. Calculations resulted in an annual loss of \$43,000.

Alternative 3--Close the airport

- Closing Arlington Municipal Airport has two advantages: 1) the Town's operating losses from the airport are eliminated, and 2) 104.5 acres of airport property can be sold. We estimate sale of the airport property would net Arlington between \$1.2 million and \$2.4 million, with \$1.9 million more likely. However, due to the time required to sell all 104.5 acres, the net present value (NPV) of the Town's revenue stream would range between \$300,000 and \$700,000. Delaying closure and sale of the airport by ten years will reduce NPV by 15% to 20%.
- Costs associated with closing the airport may include: 1) contracted payments to the FBO, and 2) the risks of losing some existing businesses and future businesses that included proximity to a general aviation airport in their location decisions. Based on

survey results alone, four of 11 Arlington businesses using the airport indicate they might relocate should the Arlington Municipal Airport close.

Alternative 4--Comply with the recommended improvements

- The fourth alternative lead to the discovery that more funding was available than originally thought. The Town's share totals \$226,750 not including the taxiway realignment. Recommendations involving safety issues are now funded at 90% state and 10% municipality. Three of the recommended projects which would improve the existing runway fit into this category: land acquisition, runway repairs, and runway repaving. The Town's share in the improvements totals \$63,000. The existing runway cannot be lengthened without compliance to the current design standards requiring 240 feet between a runway and taxiway.

Alternative 5--Relocate the airport

- The fifth and final alternative of relocating the airport and building a new 5,000 foot runway was found to be the most costly (\$2.3 million to the Town of Arlington) and involve substantial obstacles. There is an existing 30 minute rule stating that no general aviation airport can be built within 30 minutes driving time of an existing airport. With the completion of the Paul Barrett Parkway, the Millington Municipal Airport will be 15 minutes away. Should the Town decide that a new airport is necessary, justifications would have to be made and an airport master plan completed.

Other information contained in this study such as airport background, the Town of Arlington's Economic Base, survey data of airport users and other area businesses, the economic impact of the airport, general aviation background and its role in economic development and pilot profiles are all included to provide more insight for the decision making process. Many of these topics are very difficult to quantify and are, therefore, not included in out cost-benefit analyses.

Summary of Benefits and Costs of Keeping or Closing the Arlington Municipal Airport

Keep The Airport Open	Close The Airport
<p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Airport's average annual net income to the town = \$6,412 in 1998 Dollars (NPV=\$69,014). • Potential airport related business expansion 67 jobs (Survey, 1998).** <p><u>Costs:</u></p> <ul style="list-style-type: none"> • Loss of airport land sales = \$341,925 to \$1,211,555 (NVP)* <p>Unquantifiable Benefits and Costs</p> <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Potential role in business retention and attraction. • Potential role in attraction of pilots as residents. <p><u>Costs:</u></p> <ul style="list-style-type: none"> • Continue inconvenience and potential safety hazard of closure of Memphis-Arlington Road. 	<p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Revenue from airport land sales for industrial uses = \$341,925 to \$1,211,555 (NVP)* <p><u>Costs:</u></p> <ul style="list-style-type: none"> • Loss of airport's average annual net income of \$6,412 in 1998 Dollars (NPV=\$69,014). • Five businesses and 43 jobs could be at risk (Survey, 1998).** • Potential loss of airport related business expansion with 67 permanent jobs (Survey, 1998).** <p>Unquantifiable Benefits and Costs</p> <p><u>Benefits:</u></p> <ul style="list-style-type: none"> • Improve local traffic convenience and eliminate safety hazard by re-connecting Memphis-Arlington Road. <p><u>Costs:</u></p> <ul style="list-style-type: none"> • Increased truck traffic. • Conflict associated with increased industrial land uses in close proximity to residential areas. • Loss of potential role in business retention and attraction. • Loss of potential role in attraction of pilots as residents.

*The range depends on absorption rate, land prices, and whether the Town uses some of the airport land for public purposes.

**The transportation needs of Arlington businesses can be met by the Millington Airport.

Introduction

The Regional Economic Development Center (REDC) at the University of Memphis was contacted by the Town of Arlington to conduct a study of the Arlington Municipal Airport. Town administrators would like a better grasp of the economic costs and benefits of the airport to their town in light of large capital expenditures to upgrade the facility. There are concerns that the airport is not only an expense to the Town, but that it also occupies a large amount of land that could be used for commercial and industrial purposes. In the course of discussion, it was determined that there were several possible alternatives for the Town of Arlington. These alternatives are as follows:

- 1) Continue present operations without the recommended capital improvements.
- 2) Continue operations at a reduced level without the FBO.
- 3) Close the airport.
- 4) Comply with the recommended improvements.
- 5) Relocate the airport.

The purpose of this study, therefore, is to assist officials of the Town of Arlington make a more rational decision by identifying and quantifying the economic impacts of the Arlington Airport on the Town of Arlington and to outline economic consequences of the alternatives for the future of the Arlington Airport.

REDC's methodology and scope includes the collection of data from the Town of Arlington and the Fixed Base Operator (FBO) to identify costs and benefits generated by the airport. A survey of local businesses and airport users has been conducted by the Town to determine their views of the benefits of the airport. This report will summarize the survey results and calculate the economic impacts derived from measurable survey data.

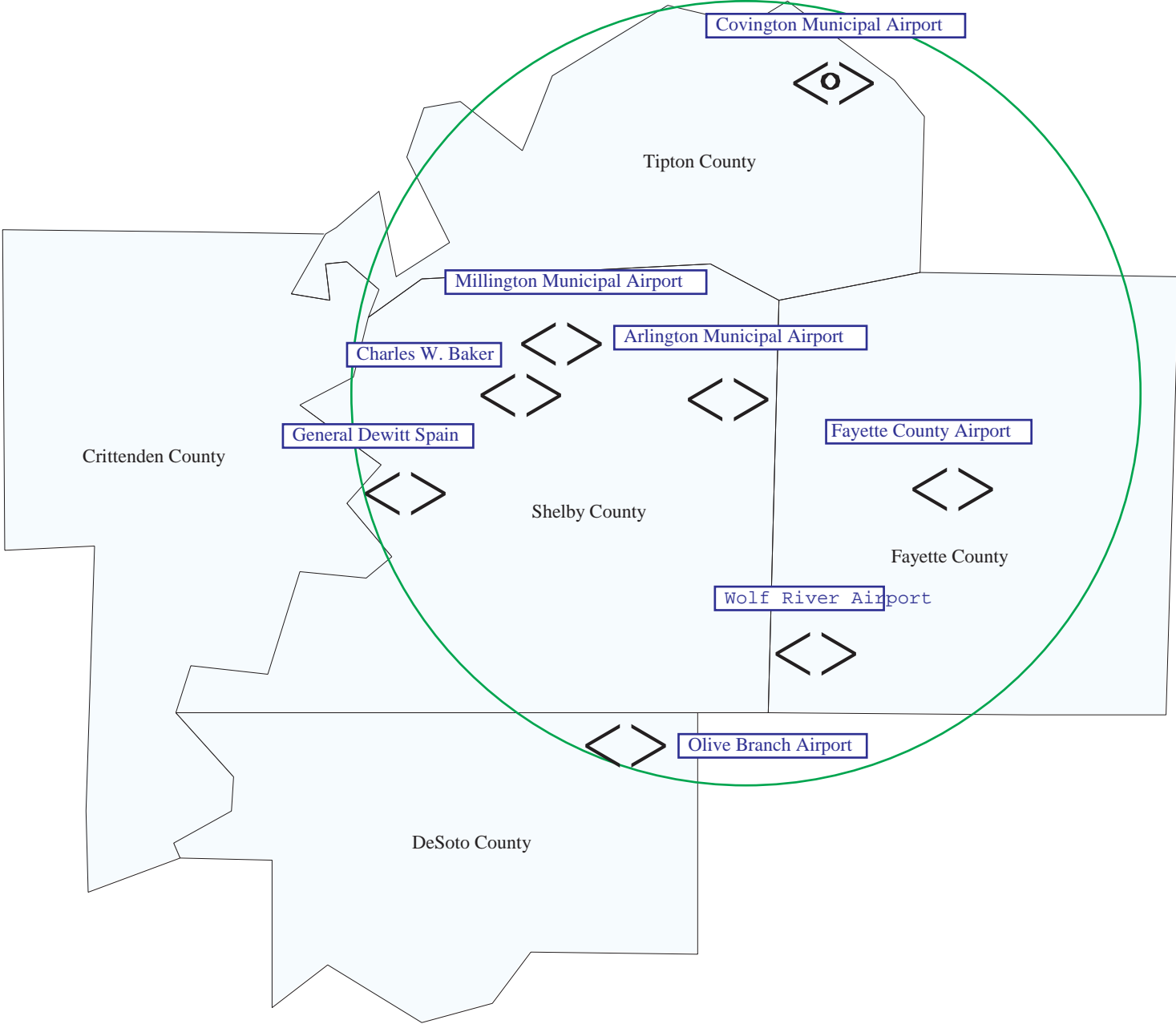
Airport Background

The Arlington Municipal Airport (FAA designation LHC), located in northeastern Shelby County, is a general aviation airport with a 3,800 foot by 75 foot runway constructed in 1968 as a result of a grant agreement between the Federal Aviation Administration (FAA) and the Town of Arlington. A hangar and terminal were added the following year with the State of Tennessee sharing the cost with the Town of Arlington. The Arlington airport was in operation by 1969 (Airport Directory, 1997-1998; Allen and Hoshall, 1975).

The airport has historically been operated by a fixed base operator (FBO) under contract with the Town of Arlington. Memphis East Aviation currently provides fuel and maintenance services, hangar space, and tie-down space for general aviation aircraft. There are 51 planes based at Arlington Municipal Airport (Santos, 1998).

The Arlington Airport is situated between Highway 70 and Interstate 40 on Airline Road. In relation to other general aviation airports, it is 12 miles ESE of Millington Municipal Airport, which is the former naval base airport, 14 miles E of Charles W. Baker Airport, 16 miles WNW of the Fayette County Airport, 21 miles SSW of Covington, 22 miles NNE of Olive Branch, and 22 miles ENE of General DeWitt Spain (See Map 1 and Table 1 on the following pages). The nearest commercial airport and major hub is Memphis International Airport which is 24 miles SW of Arlington. These airports are all located in the Memphis Metropolitan Statistical Area. The Arlington Airport is located in the line of growth as greater Memphis expands further east. The Paul Barrett Parkway, currently under construction, will link Arlington to Millington (July, 1998) and eventually to Collierville. While the Parkway will lessen the time it takes to reach Millington, it, at the same time increases the accessibility of the airport to Germantown and Collierville populations.

The annual operations (take-offs and landings) of the Arlington Airport are 34,166 (Santos, 1998). A large number of these operations are students enrolled in flight training.



Map 1

General Aviation Airports within a 25 Mile Radius of Arlington



Regional Economic Development Center
 Prepared by Sonya Schenk and Lisa Milligan
 June 1998

Table 1
Airport Characteristics
General Aviation Airports within 25 Miles of Arlington Municipal Airport

Airport Name	City	Runway Dimensions (ft)	Runway Lights	Fuel	Instrument Approach	Powerplant Service	Airframe Service	Based Aircraft	Annual Operations
Arlington Municipal	Arlington, TN	3,800 X 75	Yes	Yes	No	Yes	Yes	46	34,166
Millington Municipal	Millington, TN	8,000 X 200	Yes	Yes	ILS/DME	Yes	Yes	33	19,040
Charles W. Baker	Millington, TN	3,500 X 75	Yes	Yes	No	Yes	Yes	83	39,600
Fayette County	Somerville, TN	3,500 X 75	Yes	Yes	No	Yes	Yes	23	11,070
Wolf River	Rossville, TN	3,100 X 100	No	Yes	No	No	No	24	7,000
Covington Municipal	Covington, TN	4,998 X 75	Yes	Yes	No	No	No	50	31,580
Olive Branch	Olive Branch, MS	6,000 X 100	Yes	Yes	No	Yes	Yes	212	106,150
General Dewitt Spain	Memphis, TN	3,800 X 75	Yes	Yes	No	Yes	Yes	80	39,050

Source: Santos, 1998.

Pilot Training International, based at Arlington Municipal Airport, has close to 30 students. According to the FBO, about 12 of the students who have graduated from pilot training now fly for commercial airlines (Personal Communication, 1998).

The Arlington Municipal Airport was formerly designated as a reliever airport and served to reduce small plane congestion at Memphis International Airport until 1997 when it lost that designation and \$7,500 in funding annually for utilities (Goad, 1997). FAA personnel stated that when the Millington Airport became available, its 8,000 foot runway made it the obvious choice for a reliever airport (Personal Communication, 1998).

Overview of The Town of Arlington's Economic Base

The Town of Arlington has strong ties to manufacturing and, for its relatively small population, a large export base. Using a combination of sources, just over 90 businesses were identified with Arlington addresses (Tennessee Directory of Manufacturers, 1997; Who's Who, 1995; Industrial Pinpointer, 1996-1998; National Decision Systems, 1997, and BellSouth White Pages, 1997). It is important to note that these businesses are from a broader area than the city limits of Arlington. However, of these businesses, 24 were identified as manufacturers indicating that these companies export their products or services to a market area extending well beyond the Town of Arlington. Several companies located in the Arlington Industrial Center have national and international markets. This large export base brings money into Arlington through property taxes and employee spending at local establishments during the day. Arlington has a higher worker population than resident population.

The population of Arlington, however, is expected to grow dramatically in the next several years. The Land Development Plan prepared by the Arlington Municipal Planning Commission in 1996 projected that by 2003 the population would be 4,345 or almost 3 times the 1990 population. Local officials believe this number will be higher. These annual projections were adapted from Shelby County Office of Planning and

Development's projection of 9,560 for the year 2010, a 14.5% annual increase. The Town of Arlington has chosen to maintain its low density rural environment, as such the demographics of the people moving to Arlington are likely to reveal a larger percentage of upper income households.

The Land Development Plan also addresses the issue of the worker population in Arlington. In 1992, 45% of 2,350 workers in Arlington were employed in manufacturing, 38% in services, and 5.3% in retail trade. The implication of these numbers is threefold: first, Arlington residents pay taxes to support an infrastructure used by non-residents; second, non-residents leave the Town at the end of the day and are not likely to spend money in Arlington; and third, the exodus of the worker population leaves Arlington without its fair share of sales taxes. As the population grows, however, more retail activities can be anticipated and the amount of spending in the Town of Arlington will likely increase as residents shop in the Town offsetting the loss of revenue from non-resident workers (Land Development Plan, 1996).

Survey of Airport Users and Other Area Industries

Introduction and Methodology

The administration of the Town of Arlington conducted a survey of local establishments and airport users to determine the economic impact of the airport. Surveys were sent to all registered businesses in the Town of Arlington and all users of the Arlington Airport. Many airport users own businesses outside of Arlington. Those airport users who received surveys as local businesses were omitted from the airport users list. The survey was patterned after University of Memphis and Massachusetts Department of Transportation surveys recommended for general aviation airport studies (See Appendix), but it also included questions to determine the airport's impact on economic development in the Town of Arlington. The purpose of the survey was to better understand how local establishments and others use the airport, to what extent, for what purpose, and how reliant they are upon the airport. Usage of the airport may reveal economic impacts that

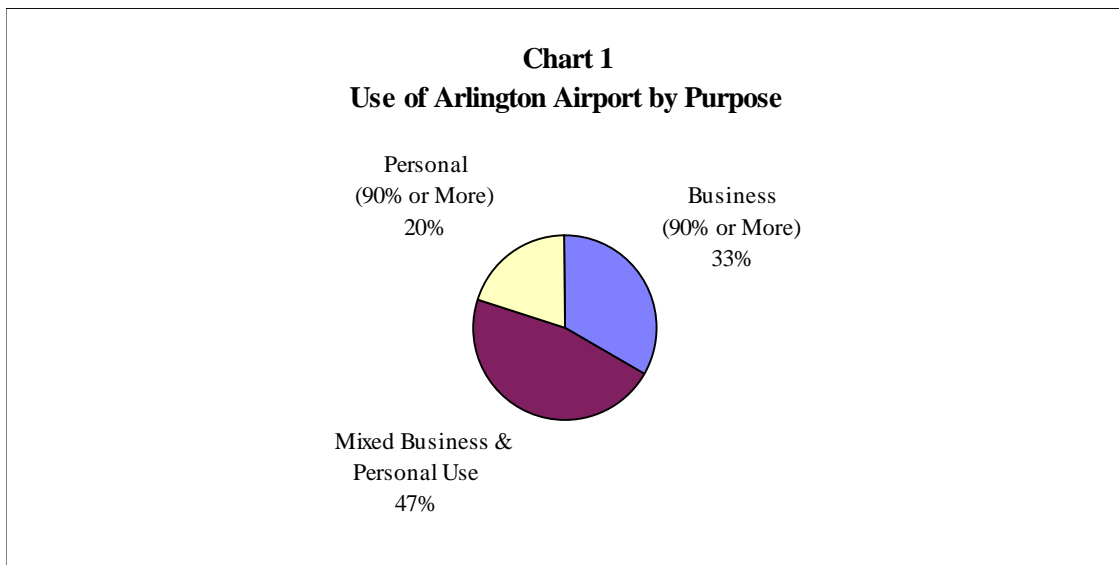
are as yet unknown. A total of 92 surveys were distributed. Of the 92 surveys, 50 were returned for a 54% response rate. The data from these surveys are presented only in aggregate to maintain respondent confidentiality.

Characteristics of Survey Respondents

Table 2 reveals that of the 50 respondents to the survey, 30 (60%) were users of the Arlington Municipal Airport. One other respondent was a user of general aviation airports. Chart 1 reveals the purposes for airport usage. The majority of the users of the Arlington Municipal Airport (80%) use the airport for both business and personal use with 33% citing business usage at 90% or greater.

Table 2
Survey Respondent Characteristics

	#	%
Users of General Aviation Airports	31	62%
Users of Arlington Municipal Airport	30	60%
Aircraft Owners	24	48%
Total Respondents	50	100%



Characteristics of Arlington Municipal Airport Users

Table 3 presents industry type, annual sales, annual payroll, market geography, number of employees, and frequency of airport use of the 23 business users of the airport. The predominant industries of the survey respondents were manufacturing, retail trade, and services. Airport users tend to be relatively small firms (less than 50 employees), making 10-49 roundtrips per year.

The 23 respondents reported a total of 1,302 employees of which 1,088 were full time employees, 94 were part time employees, and 120 were contract employees. These businesses bring in a reported 258 clients/customers, 70 employees, and 131 guests annually to the Town of Arlington. Three businesses used the airport to ship products or materials with an annual value of \$51,000, and two businesses indicated they received items with an annual value of \$1,000.

Table 4 provides the annual roundtrips by industry, by market, and by sales level. Respondents reported 1,039 annual roundtrips of which 460 (44%) were business related, while 569 (56%) were personal. It is important to note that all respondents did not provide the number of roundtrips made annually.

Table 3
Selected Characteristics of Arlington Municipal Airport Users
(Based on Survey of Respondents)

Industry		
Industry Group	#	%
Agriculture	-	-
Construction	-	-
Manufacturing	6	26%
Wholesale Trade	2	9%
Retail Trade	6	26%
F.I.R.E.	2	9%
Services	5	22%
Government	1	4%
Other & Non-Business	1	4%
Total	23	100%

Market		
Market Geography	#	%
Local	5	22%
Regional	8	35%
National	3	13%
International	5	22%
Not Available/Non-Business	2	9%
Total	23	100%

Sales		
Annual Sales	#	%
Less Than \$1 Million	8	35%
\$1 Million to \$10 Million	7	30%
\$10 Million to \$100 Million	7	30%
Over \$100 Million	1	4%
Not Available/Non-Business	-	-
Total	23	100%

Employees		
Total Employees	#	%
Less Than 10	11	48%
10 to 49	6	26%
50 to 99	2	9%
100 to 249	2	9%
250 and Over	1	4%
Not Available	1	4%
Total	23	100%

Payroll		
Annual Payroll	#	%
Less than \$500,000	13	57%
\$500,000 to \$1 Million	2	9%
Over \$1 Million	7	30%
Not Available/ Non-Business	1	4%
Total	23	100%

Frequency of Airport Use		
Annual Roundtrips	#	%
Less Than 10	1	4%
10 to 49	18	78%
50 to 99	-	-
100 or More	2	9%
Not Available	2	9%
Total	23	100%

Table 4
Roundtrip Flights From Arlington Municipal Airport
By User Category

Category	Respondents	Annual Roundtrips	% of Total Use	% of Business Use
All Roundtrips	30	1039	100%	
Personal Use	27	579	55.7%	
Business Use	23	460	44.3%	100.0%
By Industry				
Construction	0			
Manufacturing	6	76	7.3%	16.5%
Wholesale Trade	2	35	3.3%	7.5%
Retail Trade	6	67	6.4%	14.6%
Services	5	213	20.5%	46.4%
F.I.R.E.*	2	42	4.0%	9.1%
Other or Not Indicated	2	27	2.6%	5.9%
Totals	23	460	44.3%	100.0%
By Market				
Local	5	47	4.5%	10.3%
Regional	8	109	10.5%	23.7%
National	3	82	7.8%	17.7%
International	5	177	17.0%	38.5%
Not Indicated	2	45	4.3%	9.8%
Totals	23	460	44.3%	100.0%
By Sales Level				
Less Than \$1 Million	8	120	11.5%	26.0%
\$1 to \$10 Million	7	103	9.9%	22.3%
\$10 to \$100 Million	7	238	22.9%	51.7%
Over \$100 Million	0			
Not Indicated	1			
Totals	23	460	44.3%	100.0%

Note: *F.I.R.E. = Finance, Insurance, and Real Estate

Significance of The Arlington Airport in Business Location Decisions

The Arlington Municipal Airport was viewed by many survey respondents as an important factor in their location decision. Nineteen of 45 businesses (42%) indicated the airport influenced their decision to locate in or near Arlington. Fourteen firms said the airport was essential or very important to their business (Table 5-a). Five of these firms reported sales of less than \$1 million, four reported sales between \$1 and \$10 million, and five of the 14 firms reported sales between \$10 and \$100 million.

Table 5-a
Significance of Arlington Municipal Airport
In Business Location Decisions of Existing Firms

	No. of Firms*	Total Employees	Aircraft Owned
Essential or Very Important	14	496	15
Moderately Important	5	440	3
Not a Consideration or Not Indicated	26	486	9
Totals	45	1,422	27

Note: *Five respondents of the 50 used their planes exclusively for personal activities and are not included in the total.

Five of the 14 firms indicating the airport was significant to their location decision are located within in the Town of Arlington. Two reported sales of less than \$1 million and three reported sales of over \$1 million. Table 5-b provides the responses

Table 5-b
Significance of Arlington Municipal Airport
to Businesses Located within the City Limits

	No. of Firms*	Total Employees
Essential or Very Important	5	44
Relocate upon Airport Closure	4	43
Reside in Arlington because of Airport	3	40
Total Respondents*	5	44

Note: *5 respondents provided answers to 3 different questions.

to three different questions by those firms located in Arlington citing that the airport was essential or very important to their business. Four of the five cited relocation upon the closure of the airport.

Three of five respondents who own businesses stated that they moved to Arlington because of the airport. Three other respondents not included in this table stated that they moved to Arlington because of the airport, but operate businesses outside the city limits of Arlington. These six households could represent a trend. With the high percentage of residential-estate zoning in the Town of Arlington, the likelihood that upper income households with the financial capacity to own and operate small planes is increased.

Five firms using the airport indicated that the presence of the Arlington Airport was moderately important in their location decision. Four of these firms were located in the Town of Arlington (two of the large firms and two of the small firms). Of the 19 businesses stating that the Arlington Airport was a factor in their location decision, seven businesses (223 employees) said that they would relocate, nine said they would use other airports, and three gave no response.

Four of the seven businesses stating that they would relocate are located in Arlington and employ 43 workers. The other three businesses are located nearby. It appears, therefore, that four firms are located in Arlington because of the airport and may leave if the airport closes. However, stating that their presence is specifically due to the airport may be problematic. Firms could leave for other reasons even if the airport remained open. Similarly, a general aviation airport may have a significant part to play in attracting future industries if other economic growth factors are in place. This may be evidenced by the 42% of businesses surveyed stating that the airport played a role in their location decision.

Significance of The Arlington Airport in Business Expansion

Nineteen businesses responding to the survey plan to expand within the next 5 years. Sixteen of these indicated that the airport was a significant factor in their expansion decision. A minimum of 126 employees and a payroll of \$3,717,000 are anticipated from the expansions. Of the sixteen respondents, six are located in the Town of Arlington; their expansion plans are for 67 new employees with average salaries of \$24,447 for a total payroll of \$1,637,949 and capital investments of \$14,262,500 (Table 6). It should be

Table 6
Significance of Arlington Municipal Airport
in Business Expansion Decisions

	Total	Arlington Businesses
Airport Users Planning to Expand Within 5 Years	19	9
Existence of Arlington Municipal Airport Is a Significant Factor In Their Expansion Plans*	16	6
Anticipated New Employees**	126	67
Average Salary	\$29,500	\$24,447
Anticipated Capital Investment	\$19,187,500	\$14,262,500

Note: *Three businesses felt the airport was moderately important in their location decision. However, two of the 3 businesses did not answer whether it was a significant factor in their expansion plans. Only one business indicated the airport was not a factor in expansion.

**A total of 35 employees were anticipated but no average salary was given--these employees were added, but the average salary is the average of 91 anticipated employees.

noted here that we cannot say emphatically that expansion would not occur without the presence of the airport.

Survey Respondent's View of Arlington Airport's Role in Economic Development

Table 7 on the following page provides the results to the question about the airport's role in economic development. Twenty-one (42%) of 50 respondents believed that the airport had a role in bringing business to the area. Of the 21, 16 were airport users. Several

comments were made questioning why the airport was being considered for closure. Users of the airport had more positive responses about the airport's role in economic development, which is not necessarily indicative of bias, but instead may

Table 7
Responses To Survey Question Regarding Role Of
Arlington Municipal Airport in Economic Development

	Total Responses	User of Arlington Municipal Airport	
		Yes	No
Important to Economic Development	21	16	5
% of Total Respondents	42%	32%	10%
Don't Know or No Response	13	7	6
% of Total Respondents	26%	14%	12%
Very Little or No Impact on Economic Development	3	1	2
% of Total Respondents	6%	2%	4%
Positive Comments Not Related to Economic Development	13	6	7
% of Total Respondents	26%	12%	14%
Total Survey Respondents	50	30	20
% of Total Respondents	100%	60%	40%

indicate that they are more aware of the general aviation industry. Several non-users believe that the airport contributes to economic growth. Some voiced concern that closing the airport would have negative economic consequences for the Town of Arlington. Four respondents mentioned that keeping the airport open would send the message that Arlington is a progressive, growth-oriented community. Eleven of the 21 owned businesses in Arlington and were a mix of small (5), medium (3), and large (3) firms. The responses to the survey question about economic development from the Arlington respondents were:

- The Arlington Airport is in a perfect location in Shelby County (2).
- Executives come into Arlington through the airport bringing growth (4).
- The Arlington Airport is an asset that will increase in value (2).
- The Arlington Airport attracts and retains small businesses (2).
- I bought a home and moved my business here because of the airport (2).
- There are tax benefits and other unseen benefits provided by the airport (3).

The responses do not add to 11 because some respondents made multiple statements.

Five Alternatives for the Arlington Airport

While the surveys provided some insight into this decision, there are quantifiable financial implications. This section presents these implications and the various costs and benefits of the five alternatives outlined at the beginning of the paper.

- 1) The Arlington Airport continues to operate in its present state without the recommended capital improvements.

Since there are no regulations stating that the Town of Arlington has to make improvements to the airport other than basic safety improvements, such as filling in the dip in the runway, the Town could continue to operate the airport without substantial monetary investments. However, the Town as owner of the airport is liable should there be an accident caused by safety violations. Town officials are concerned about operating a mediocre airport. Town officials stated that they had received complaints about airport conditions, specifically runway conditions. The surveys yielded no outright complaints, but 24 respondents did answer the question about what to change at the airport with the following responses:

- The runway needs to be refurbished, lengthened, or improved (11).
- Upgrade, refurbish, remodel facilities or make the facilities more inviting (7).
- Improve services (3).
- Add more hangar space (6).
- Add an ILS system (5).
- Support by the City of Arlington (2).

These numbers do not add to 24 as some respondents made multiple comments. If these changes are not addressed, usage of the airport could decline with a corresponding decline in revenues.

The Town wants the airport to be an asset to the budget. Table 8 includes projections of future net income to the Town from airport operations based upon FBO revenues from 1988 to 1997 and other income and expenditures as provided by the Town.

Table 8
Net Income to the Town of Arlington from Airport Operation

Year	Actual & Projected Revenues from FBO	Other Income	Total Income	Expenditures	Net Income to the Town of Arlington	In Constant 1998 \$
1994	\$9,481	\$16,603	\$26,084	\$16,542	\$9,542	\$10,752
1995	\$10,832	\$14,368	\$25,200	\$14,547	\$10,653	\$11,670
1996	\$11,259	\$15,930	\$27,189	\$12,669	\$14,520	\$15,442
1997	\$12,506	\$8,500	\$21,006	\$10,487	\$10,519	\$10,854
1998	\$15,472	\$7,000	\$22,472	\$21,500	\$972	\$972
1999	\$17,323	\$7,000	\$24,323	\$21,061	\$3,262	\$3,158
2000	\$19,631	\$7,000	\$26,631	\$21,061	\$5,570	\$5,219
2001	\$22,257	\$7,000	\$29,257	\$21,061	\$8,196	\$7,431
2002	\$25,286	\$7,000	\$32,286	\$21,061	\$11,225	\$9,840

Notes: 1) 1998 expenditures include \$14,000 for A/C unit, \$6,000 for NDB, and \$1,500 for utilities. Other income is the state matching grant for maintenance.

2) Projected expenditures include the average of historical expenditures, \$6,000 for NDB, and \$1,500 for utilities.

3) Costs for mowing the grass by Public Works are not included in these estimates.

Source: FBO revenue projection based upon FBO Revenues 1988-1997 and FBO Lease Agreement; other income and expenses as reported by the Town of Arlington.

The airport does not lose money, however, the net income projections do not include any improvements nor do they include the cost of mowing the grass around the airstrip, which is a public works expense. Should the Town choose to invest in any improvement the numbers are less favorable. As time goes on maintenance expenses are likely to increase causing the airport to become more of a cost to the Town.

The only requirement the Town has is to keep the approaches to the runway free and clear of trees and buildings. If the Town does not comply with any of the recommended capital improvements, it will still continue to receive 50% maintenance funding from the state.

According to the City of Arlington staff, the maintenance funding grant has historically been capped at \$7,000 regardless of what the Town spends as reflected in Table 8. In 1994, the Town received a grant of \$9,541, but the grant amount was reduced to \$7,000 again for 1995 and 1996. In 1997, the Mayor requested an increase due to a loss in funding for utilities after Arlington lost its reliever status. As a result of the request the Town received \$8,500 for 1997 (Personal Communication, 1998).

According to the FAA, the Town will eventually have to make some improvements to the runway for safety precautions. Airport owners are liable should an accident occur that was attributable to an unsafe runway condition. Even though the capital improvement project recommendations that have been made by the State Department of Aeronautics are not regulations and will not halt operations, basic safety standards must be met or the airport's license can be suspended temporarily (Personal Communication, 1998).

Indirect Economic Impact of Arlington Municipal Airport (Business Expansion)

Sixteen businesses indicated that they were planning to expand and indicated that the airport was a significant part of their expansion decision (Table 6, page 13). Even though the respondents stated that the existence of the airport was a significant factor in their decision to expand, the availability of the Millington Airport just 10 to 15 minutes away may afford the same benefits. Potential total capital investment for the planned expansions is \$19,187,500.

Estimating the benefits of the spending that occurs with expansions to the Town of Arlington is not possible. The multipliers used to determine the successive rounds of spending, increased earnings, and job creation are not available below the county level. The Town of Arlington due to its small economy will not benefit from a majority of the purchases, which take place in Shelby County rather than the Town of Arlington. Arlington does benefit from the presence of the workers who will spend some money locally, although these expenditures are likely to be small such as lunch or gasoline purchases.

Table 9 shows the economic benefits these investments will have on Shelby County and the Town of Arlington. It is important to note that all 537 workers will not necessarily be in Arlington--the multipliers show how many jobs are created throughout the Shelby County economy. With the businesses expansions and the additional employees, other

Table 9
Economic Impact of Airport Related Planned Business Expansion
on Shelby County and the Town of Arlington

	Initial Round (Indirect)	Successive Rounds (Induced)	Total Impact*
Construction Spending	\$19,187,500	\$27,457,313	\$46,644,813
Increased Earnings	\$14,614,846	\$21,031,120	\$35,645,966
Increased Jobs	220	317	537

Note: Multipliers are for the State of Tennessee and may vary from county to county depending upon the availability of construction materials. The construction total impact multiplier is 2.4310 and the earnings multiplier is .7642.

*Total Impact yields 537 jobs, which are temporary lasting only through the construction phase.

Source: Regional Input/Output Multipliers (RIMS) of the US Department of Commerce, 1992.

beneficial outcomes could be the attraction of other businesses to establish, remain, and/or expand in Arlington and the possible attraction of more people (upper income) to live in Arlington. The number of anticipated permanent jobs from these expansions totals 67 for the Town of Arlington (Survey, 1998).

2) Continue operations at a reduced level without the FBO.

Operating the airport without an FBO would require personnel at the Town's expense, but the Town would have the benefit of any profits. If operations are reduced, so are the revenues. Currently, the 34,166 annual operations average \$11.34 each for a total of \$387,641 in revenues annually (Santos, 1998, and FBO Revenues, 1997). The hours of operation for the airport are currently dusk to dawn 7 days per week (Santos, 1998).

Reducing hours will likely lead to a reduction in operations. Table 10 outlines the basic benefits and costs that may be expected if present operations continue without the FBO. The return for the Town with estimated total expenditures of \$176,911 yields a 31% loss.

Table 10
Costs and Benefits of Arlington Municipal Airport
to the Town of Arlington without the FBO
and with a Reduction in Operations

Revenue		
Rents	24 tie-downs & 6 hangared	\$36,000
Fuel Revenues*	Sales of 45,000 gallons @ 1.97 per gallon (50% operations but continuing same amount of sales to flight school)	\$88,650
Ground Lease Rent @ \$120 per month for small hangar		\$1,440
State Share of Maintenance		\$8,500
Total Revenue		\$134,590
Operating Costs		
Salaries	Airport Mgr & 2 line people	\$70,000
Fuel Expenditures	45,000 gallons @ \$1.43 per gallon	\$64,350
Taxes and Insurance		\$10,000
Utilities	Light, Gas, and Water	\$7,500
Phone		\$2,500
Maintenance and Other Expenses (Net to Town: 1994-1997 Average)		\$13,561
Depreciation**		
Office Equipment depreciated between 3 & 5 years.		\$6,000
Mechanical Equipment depreciated at 7 years		\$3,000
Total		\$176,911
Net Operating Income		(\$42,321)

Note: *Fuel sales reflect a 50% reduction in operations for outside sales and the same level of operations for the flight school. The 50% reduction assumption is based upon no available maintenance service and reduced hours of operation.

**Memphis East Aviation owns office and mechanical equipment. Estimated replacement costs are \$25,000 for office equipment and \$20,000 for mechanical equipment.

Source: Town of Arlington for Maintenance Costs and Based on FBO Revenues and Expenditures, 1997.

The data for Table 10 was obtained from the FBO. There are currently 8.5 full time equivalent employees at the Arlington Airport. The largest single source of revenue

comes from fuel, which was verified by the audit conducted by Arnold, Spain, and Company, P.C. in the Spring of 1998. The audit was for 1997 only and presented revenues and one source of expenditures which was fuel. The revenues were divided among fuel sales, flight training, charter, storage charges, and "other" taxable sales. The FBO provided other expenditures, including salaries, taxes and insurance, utilities, phone and maintenance as shown in Table 10.

There are no FAA regulations stating that a municipal airport must have an FBO. A concern of the FAA is the lack of revenues that may be generated after the FBO leaves. To the FBO the airport is a business. FBOs are experienced in all of the details involved in the everyday operation of an airport, they are equipped to offer a variety of services adding to the bottom line. Should operations be scaled back, the Town may be faced with a greater deficit than it already is showing. If the airport continues operations, the current FBO plans to keep the flight school open and charter service available. Should these activities increase, the revenues from fuel sales will increase.

3) Close the airport.

Federal and state aviation officials acknowledge that the decision to close Arlington Municipal Airport lies with the Town, but they indicate the airport should be viewed as a service such as a park, rather than as a source of revenue. However, the airport site is located in the Arlington Industrial Center and financial gain would come from closing the airport and selling its land to industries wanting to expand or to new industries locating in the area. If closed, 50% of the proceeds from the sale of airport land has to be returned to the FAA at current fair market value upon the sale (Code of Federal Regulations, revised 1997).

If new industries located in the industrial park, commercial property taxes would be collected adding to the Town's revenue. How quickly the land sells is the central issue. Currently the total occupied land area in the industrial park is roughly 100 acres (Shelby

County Property Tax Assessors Files, 1996). Using the 100 occupied acres to calculate an absorption rate for the industrial center's 358 acres yields an annual average of 2.94 acres per year since the industrial center opened in 1964. Currently in the Memphis Metropolitan Statistical Area, industrial development is taking place in Southeast Shelby County and Northern Desoto County. The Memphis Business Journal recently estimated that industrial land in these areas would be fully absorbed in 10 to 15 years (Overstreet, 1998). This may indicate the time when the Town Arlington can expect its industrial center to begin to develop at a much faster rate than historical trends. Other factors, however, such as infill development coupled with incentives may draw industries back into the City of Memphis, which would lessen the value of Arlington's land.

Appendix B at the end of this report provides the net present values (NPV) for the selling or usage of the airport's 104.5 acres based on recent property sales at the Arlington Industrial Center. This analysis assumes that the airport property will sell at the same proportion as the remaining acres of industrial park land sells, and that airport property and the existing industrial park are of equal value per acre and are equally desirable as industrial property.

The Arlington Industrial Center currently has 258 acres of vacant land, however, 100 acres are under contract, which upon closure will leave 158 acres in smaller tracts ranging from 3 to 60 acres. Recent land sales have yielded a dramatically increased absorption rate. Forty-eight acres of land have sold from 1995 to present. According to industry sources, the average sales price per acre has been \$24,538. The acreage sold has street frontage and utilities available, suggesting that remaining tracts without these features would likely sell for less.

Sale of the airport property will yield the Town of Arlington an estimated net present value (NPV) of \$715,176 to \$1,311,555 depending upon selling price. However, if 21.5 acres are dedicated to public use (i.e. maintenance facility--10 acres, sheriff's substation--10 acres, or roadway-1.5 acres), payment to the FAA at the market value would result in a

significant cash outflow in year 1. This up front cash outflow would reduce NPV to between \$341,925 to \$627,054 depending upon the selling price.

Reconnecting Memphis/Arlington Road would require just over 1.5 acres of airport land. Arlington's Land Development Plan contains the Municipal Major Road Plan, which has been adopted by the Town as policy. The Major Road Plan proposes that Memphis/Arlington Road be reconnected as a minor collector with a 60 foot right of way. Reconnecting Memphis/Arlington Road provides immediate emergency access to industries and the future school. It also creates more road frontage for other industries looking to locate in Arlington. A cost of connecting the industrial center to the Town is the potential for more truck traffic on Airline Road, which may yield another set of circumstances. Some of the remaining 83 acres of airport land may be absorbed by local industries looking to expand.

If the four businesses in Arlington stating that they would relocate upon the closure of the airport do so, their leaving will impact the city's budget. A loss of 43 employees represents some loss in local spending as these employees will not likely come to Arlington. Using a combination of average industry wages and survey data for the four businesses yields an estimated average salary for each employee of \$23,338 or aggregate salaries of \$1,003,540. The loss of jobs in Arlington and Shelby County results in lost income. Just as successive rounds of spending occur when a capital expenditure is made, the reverse occurs with the loss of income. Induced income occurs as a result of the spending from the total payroll. Estimating the exact impact on the Town of Arlington is again problematic due to its small size.

Another issue with the closure of the airport is the current FBO, who would be put out of business in Arlington by the closure. There would have to be compensation for the hangar he owns. The ground lease for the hangar expires in 2008. There are six full time and five part time employees at the airport not included in the 43 from the surveys, which brings the total potential number of jobs lost to 52.

If the airport is important for these four firms, there may be future businesses who choose not to locate in the Town. Closure of the airport may be interpreted by future businesses as negative. Other larger studies conducted on general aviation airports and their usage have yielded similar results to those in Arlington. The Henry County Airport study revealed that the smaller companies in Henry County were more reliant upon the airport than were the larger companies (Redding, 1997). This also seems to be the case for some of the smaller businesses in the Town of Arlington.

Another interesting factor is the issue of capacity or the maximum number of operations an airport can handle. Discussions with local fixed base operators (FBOs) revealed that all of the local airports in the Memphis MSA operate below capacity (Personal Communications, 1998). For example, the Olive Branch Airport, which is the busiest general aviation airport in the MSA, has 106,000 annual operations or an average of 285 operations daily; according to airport personnel, it could handle 400 operations daily (Personal Communication, 1998). Other area airports reported much the same underutilization but to a greater extent. Therefore, closure of the Arlington Airport would not create congestion at other local general aviation airports.

If the Arlington Municipal Airport does close, the nearest general aviation airport is Millington Municipal Airport (former naval air station), which will be just 10 to 15 minutes away when the Paul Barrett Parkway is completed. The Millington Airport is currently open for general aviation traffic and hangar space (Personal Communication, 1998). If Arlington closes its airport, the issue becomes whether or not some businesses would choose to locate in Millington instead of Arlington.

Arlington needs to consider the finality of this decision. In the foreseeable future there may be little likelihood that the Town of Arlington would ever be considered by the state and federal governments for another airport. Other considerations in this decision that may need to be taken into account are the upswing in the general aviation industry,

company reliance on just-in-time deliveries, and the impact of additional industrial development at the airport site on future residential development in the surrounding area.

- 4) Comply with the state recommended capital improvement project.

The Town of Arlington received capital improvement recommendations from the state for the Arlington Municipal Airport totaling \$1,975,000. The Town's share of the capital improvement projects originally totaled \$511,250. Since the initial recommendations were made, the state now administers federal funding through block grants. Any recommendation involving a safety issue is now funded at 90% state and 10% municipality. Therefore, the Town's share of total recommended expenditures would be \$302,750. Included in these recommendations is the realignment of the existing taxiway at a cost of \$760,000. Town officials have stated that the realignment of the taxiway to the east as recommended by the state is not possible, because it would necessitate the relocation of Wright Medical's shipping and receiving department. The possibility of the runway being relocated 40 feet toward the west was discussed with State officials. Chief Engineer, Tom Burgess, of the Department of Transportation's Aeronautics Division states that there is not enough distance between Jetway and the existing runway to realign the runway 40 feet toward the west (Personal Communication, 1998).

Table 11 on the following page was compiled by the Town of Arlington and is based upon recommendations received from the State of Tennessee. The table provides each recommended component for the airport capital improvement project except for the realignment of the taxiway. The Town's share of all other improvements now totals \$226,750.

Table 11
Recommended Capital Improvement Projects
for the Arlington Municipal Airport, 1998

Project	Total Cost	Cost Share		Cost to Town
		State	Town	
Land Aquisition	\$280,000	90%	10%	\$28,000
Runway Repair	\$50,000	90%	10%	\$5,000
Repave Runway	\$300,000	90%	10%	\$30,000
Realign Taxiway*	\$0	90%	10%	\$0
New NDB	\$20,000	75%	25%	\$5,000
Security Fence	\$60,000	75%	25%	\$15,000
Apron Expansion	\$55,000	75%	25%	\$13,750
Field Lighting	\$350,000	75%	25%	\$87,500
Terminal Renovation	\$70,000	50%	50%	\$35,000
Tree Trimming	\$30,000	75%	25%	\$7,500
Total Costs	\$1,215,000			\$226,750

Note: *The realignment would bring the distance between the runway and the taxiway to the design standard of 240 feet. A 400 foot object free area is required, therefore, the runway cannot be realigned to the west.

Source: Adapted from a Memo to the Airport Committee from Mayor Horton, March 31, 1998. Funding percentages and object free standards updated based on personal communication with State Division of Aeronautics, June 19,1998.

As indicated in the first alternative, the airport can still operate without the recommended improvements.

Suggestions have been made that the runway could also be lengthened to 4,600 feet with asphalt safety overruns at each end allowing jet access. According to Mr. Burgess, the state will not participate in funding to lengthen the existing runway because the distance between the current runway and taxiway does not meet the current design standard of 240 feet. Even if the runway were lengthened in this manner, the published length would remain at 3,800 feet, which is insufficient for jets. While pilots are allowed to land jets at any airport using their own discretion, insurance companies stipulate that jets only land on runways of 5,000 feet or longer (Personal Communication, 1998).

Economic Impact of Airport Improvements

The capital improvement project generates successive rounds of spending just as new construction does. Since the realignment of the taxiway is an impossibility, Table 12 reveals that the remaining \$1,215,000 results in successive rounds of spending totaling \$1,738,665, increased earnings of \$928,503, and 14 jobs. The total impact yields 34 jobs. It is important to note that these jobs are for Shelby County as estimates at the Town level could not be derived using regional multipliers. The improvements do take place in Arlington, however, increasing the likelihood of local spending, generating some sales taxes.

Table 12
Economic Impact of Airport Improvements
on Shelby County and the Town of Arlington

	Initial Round (Direct)	Successive Rounds (Induced)	Total Impact*
Airport Improvements**	\$1,215,000	\$1,738,665	\$2,953,665
Increased Earnings	\$928,503	\$1,328,688	\$2,257,191
Employment	14	20	34

Note: Multipliers are for the State of Tennessee and may vary from county to county depending upon the availability of construction materials. The construction total impact multiplier is 2.4310 and the earnings multiplier is .7642.

*Total Impact yields 34 jobs, which are temporary lasting only through the construction phase.

Source: Regional Input/Output Multipliers (RIMS) of the US Department of Commerce, 1992.

A cost involved in this alternative is the opportunity cost of the eight acres located at the north end of the runway. According to State Aeronautics officials, no uses except for a golf course or some types of agriculture could take place there (Personal Communication, 1998). The possible return to the Town from sales taxes of a shopping center with average annual sales per square foot of \$187.83 totals \$188,000, which is the amount of sales taxes after the State's 6% and the 1.25% for schools have been removed (Urban Land Institute, 1995). These eight acres, if developed with a floor-area ratio of .25, could house an 87,000 square feet shopping center with an assessed value of \$2,700,000. The

property taxes from this would total \$32,400 annually. It is unlikely, given the current population, that a shopping center this size would be built in Arlington within the next 10 years. It is important to note that these are opportunity benefits and not actual benefits. Another eight acres in the vicinity could develop first and cause this parcel to not develop at all. To say that the airport is limiting development and will begin incurring an annual cost to the Town of \$220,400 in ten years may be incorrect. The potential sales and property tax revenue will be incremental only if development would not be built elsewhere in Arlington.

5) Relocate the airport.

FAA officials from the local Airports District Office stated that if the Town of Arlington decides that its best alternative is to relocate the airport, Town officials can send a request to the Tennessee Aeronautics Division indicating their interest in pursuing a new airport. However, there must be strong justification. Brian Caldwell, Transportation Planner with the State Aeronautics Division, provided insight into some of the issues that would have to be addressed such as the limitations of the existing airport, possibilities for expansion of the existing airport, and whether or not the city has allowed building to take place around the existing airport effectively landlocking the airport. In addition to justifications, a master plan study for the new airport would have to be completed (Personal Communication, 1998).

Discussions with the FAA lead us to the conclusion that the likelihood of the Town of Arlington receiving funding at the federal rate of 90% of the cost and the state rate of 5% is unlikely. For the construction of a new airport, there can be no other airports located within 30 minutes driving time (Personal Communication, 1998). The completion of the Paul Barrett Parkway linking Millington and Arlington will only serve to further decrease the chances of Arlington's being able to secure funding to relocate their airport. However, the growth occurring in Northeastern Shelby County over the next 10 years may provide justification for funding a new airport.

Funding for airports is becoming more and more limited. Runway, taxiway and other required components of an airport are estimated to be \$12 million. If the Town relocates its existing airport, the proceeds from the sale of the land where the existing airport is located can be used toward the construction of a new airport. According to FAA officials, the \$3,762,000 (should the land sell for \$36,000 per acre) from the sale of the land would be applied to the cost of the new facility leaving a balance of \$8,238,000. The 90% federal and 5% state fund matching would then apply to this amount. The 5% cost to the Town of Arlington would be \$411,900 for a total cost of \$2.3 million. The Town or fixed base operator would then be obligated to construct hangar facilities as the federal and state governments do not participate in building construction funding. The Town would benefit from the future taxes of new industries locating at the old airport site.

The economic impact of airport construction is outlined in Table 13. The initial round of construction spending yields successive rounds of spending totaling \$29,172,000 and increased earnings of \$9,170,400 and 98 jobs. The total impact yields 336 jobs. It is important to note that the jobs generated by construction multipliers are temporary lasting only through the construction phase.

Table 13
Economic Impact of Airport Construction
on Shelby County and the Town of Arlington

	Initial Round	Successive Rounds	Total Impact*
Construction Spending	\$12,000,000	\$29,172,000	\$41,172,000
Increased Earnings	\$9,170,400	\$22,293,242	\$31,463,642
Increased Jobs	98	238	336

Note: Multipliers are for the State of Tennessee and may vary from county to county depending upon the availability of construction materials. The construction total impact multiplier is 2.4310 and the earnings multiplier is .7642.

Source: Regional Input/Output Multipliers (RIMS) of the US Department of Commerce, 1992.

Should the Town be able to secure funding for a new airport, the development of the airport would be several years in the future. Even if current operations are maintained and revenues continue to increase, the Town would be operating at a much greater loss with the new facility, considering the amortization of a \$2.3 million capital investment. Any improvement allowing more types of planes to land does increase airport usage and may be indicative of greater sales volumes for the FBO (Weisbrod, 1990). But it is impossible to forecast with any accuracy a potential number of operations. As stated earlier, all other local general aviation airports are operating below capacity, therefore, a dramatic increase in operations is unlikely until there is substantial population and industrial growth in Northeast Shelby County.

General Aviation Background

The Arlington Municipal Airport, like other general aviation airports, has been affected by the problems of the General Aviation industry as a whole. The Airport Master Plan for Arlington Municipal Airport prepared in 1975 provided operations projections indicative of a growing industry. The actual operations of the airport today fall far short of their projections, which were for 155,400 annual operations in 1993. Five years past 1993, the number of operations are about the same as they were in the early 1970s (Allen and Hoshall, 1975). The economic and international events that affected the general aviation industry were largely unforeseen. At almost the same time the market matured and demand began to taper off, the oil crisis hit and the economy took a downturn. In the 1980s inflation remained high, and general aviation production came almost to a standstill.

Another factor was liability lawsuits brought against the producers of general aviation aircraft. Until 1994 producers of general aviation aircraft were liable for accidents that resulted from equipment failure for the life of the plane. The lawsuits resulting from this liability made production of general aviation aircraft less profitable. The General Aviation Revitalization Act (GARA) of 1994 limits the liability of producers of general aviation aircraft to 18 years.

GARA, the current strong economy, marketing efforts, and new technology are serving to somewhat turn the industry around. Production is up as are earnings for the main producers of general aviation aircraft such that investments in future production are beginning to take place (Truitt, 1995). For example, Cessna Aircraft is investing \$40 million in expansion projects at its Wichita operation (Dinell, 1998).

The general aviation industry is, therefore, undergoing a transformation. New technology will soon make flying easier. Global Positioning Systems (GPS) are in the near future as the main navigational and landing aid as opposed to the more cumbersome instrumentation on today's aircraft (Aviation Daily, 1998). Production costs for planes are diminishing. Recent estimates from NASA indicate that general aviation airplanes may be produced and sold for around \$40,000 in the near future, which is about the cost of a luxury automobile. The Advanced General Aviation Transport Experiment (AGATE), a collaboration between NASA, the FAA, and 75 American companies, is developing the technology that could make flying more affordable to a larger segment of the population (Reeve, 1998).

If flying becomes easier and end user costs are reduced, there may be increasing numbers of students in flight training and increasing numbers of pilots able to afford their own planes. Instruction may eventually be in flight simulators reducing the time and monetary costs of standard flight training. As a result of these developments, the number of general aviation aircraft is forecasted to grow at 0.8% annually for the next 10 years, and the number of active pilots is forecasted to grow at 0.9% annually (Phillips, 1998).

There are also indications that more and more companies are beginning to favor smaller airports with charter services over the larger, more congested international airports (O'Keefe, 1998). When charter services are able to provide services at roughly the same price as larger carriers, the real saving comes with time saved. Forecasts from the Federal Aviation Administration point toward dramatic increases in commercial aviation with air

carrier enplanements increasing from 595 million in 1997 to 924 million by 2009 (FAA, 1998). These forecasts, however, may be overly optimistic as a downturn in the economy could force potential passengers to choose alternative modes of travel. As demand increases at larger airports, demand may also increase at general aviation airports.

Other factors, however, somewhat dampen this optimistic view. The FAA wants to be fully funded by user fees in the near future. Currently the only "fee" in general aviation is the fuel tax, which is currently 4.5% (FAA, 1998). Additional fees may deter potential new students or owners if expenses rise. Another factor is the economy itself. An upswing in the economy yields an upswing in the general aviation industry. The opposite is also true.

Pilot Profiles

The Aircraft Owners and Pilots Association (AOPA) maintains profiles of its 325,000 active AOPA pilot subscribers. Pilots are generally upper income professionals; 88% are college educated with average household incomes of \$100,000 and average net worth of \$462,000. The average property value of a pilot is \$213,000 (AOPA, 1998). The availability of a nearby airport may attract some of this population as residents. Lower aircraft prices in the near future may attract people of slightly less affluence.

Role of General Aviation in Economic Development

With all the indicators of an improving general aviation industry and the affluence of the pilots driving the industry, it is still difficult to measure the role of general aviation in economic development. A study conducted in 1992 by Stewart E. Butler of the Volpe National Transportation Systems Center and Laurence J. Keirnan of the Federal Aviation Administration titled, Estimating the Regional Economic Significance of Airports, suggested that there are two factors, economic impact and transportation benefit, in the measurement of an airport's importance to an area. Economic impact is "the regional

economic activity, employment, and payroll that can be attributed directly and indirectly to the operation of a local airport," and transportation benefit is the "time saved and cost avoided by travelers." Airports are many times operated as public utilities or services rather than as a profitable industries (Butler & Kiernan,1992). Therefore, in many of the studies of airports, profit is not the major concern.

But airports support the general aviation industry, which has to be viable to survive. In 1994, general aviation was a \$40 billion industry nationally, providing 540,000 jobs and serving 120 million people annually. The general aviation industry consists of light aircraft, business aviation, and regional or charter aircraft (Truitt, 1995). Determining the impact of the general aviation industry at the local level in a small town is difficult to quantify and the types of analysis used on a regional level lack validity at the local level.

Public Benefits of the Arlington Municipal Airport

In 1992 dollars the estimated annual transportation benefit per aircraft based at a general aviation airport was \$12,330 if the airport was 20 miles from the next comparable airport (Butler and Kiernan, 1992). Since the Arlington Airport is approximately 15 miles from Millington, the benefit decreases to 75% of the standard value. This means that for each aircraft based at the Arlington Airport has an annual transportation benefit of \$10,651 in 1998 dollars. The other component of the transportation benefit is the annual number of passengers. The estimated benefit per passenger was \$21.12 for an airport 20 miles away from the nearest airport (Butler and Kiernan, 1992). Again Arlington's per passenger benefit is 75% of the standard benefit or \$18.22 adjusted to 1998 dollars. The transportation benefit of the Arlington Municipal Airport totals \$489,946 with the 46 planes based there without consideration to the number of passengers served annually. Another benefit of general aviation airports is reduced delays at larger commercial airports that rely upon smaller airports to reduce air traffic (Butler and Kiernan, 1992).

Other public benefits of the Arlington Municipal Airport include:

- Vocational Aviation Program--Arlington Municipal Airport has the only FAA-approved Part 141 flight school in this region of Tennessee. There are two types of flight schools of which the 141 designation is the highest.
- Civil Defense Facility--airports are useful for shipping and receiving assistance after natural disasters such as earthquakes.
- Smaller airports in conjunction with other factors such as "availability of a market, raw materials, labor, utilities, favorable treatment by local government, low taxes, community amenities, and site that is economical to develop" stimulate local business.
- Access to the national airport system
- Recreation (Butler and Kiernan, 1992)

Summary and Conclusions

Five possible alternatives have been examined by the Regional Economic Development Center (REDC) regarding the future of the Arlington Municipal Airport.

Alternative 1--Continue present operations without the recommended capital improvements

- The first alternative shows that the airport is a break-even or slight loss for the Town's budget. If revenues continue to increase as they have over the past five years, the return to the Town will increase but not dramatically. Some minimal repairs to the runway may be required, but the Town can still operate and receive 50% maintenance funding from the State.

Alternative 2--Continue operations at a reduced level without the FBO

- The second alternative proved to be a more dramatic loss to the Town as operations were likely to be reduced with a reduction in services and hours of operation. Calculations resulted in an annual loss of \$43,000.

Alternative 3--Close the airport

- Closing Arlington Municipal Airport has two advantages: 1) the Town's operating losses from the airport are eliminated, and 2) 104.5 acres of airport property can be sold. We estimate that the sale of the airport property would net the Town of Arlington from \$715,176 to \$1,311,555 (NPV) depending upon the selling price. Should the Town choose to convert 21.5 acres of the airport land to municipal uses (maintenance facilities, sheriff's substation, or roadway), the resulting NPV to the Town would range from \$341,925 to \$627,054 depending upon the selling price.
- Costs associated with closing the airport may include: 1) contracted payments to the FBO, and 2) the risks of losing some existing businesses and future businesses that included proximity to a general aviation airport in their location decisions. Based on survey results alone, four of 11 Arlington businesses using the airport indicate they might relocate should the Arlington Municipal Airport close.

Alternative 4--Comply with the recommended improvements

- The fourth alternative lead to the discovery that more funding was available than originally thought. The Town's share totals \$226,750 not including the taxiway realignment. Recommendations involving safety issues are now funded at 90% state and 10% municipality. Three of the recommended projects which would improve the existing runway fit into this category: land acquisition, runway repairs, and runway repaving. The Town's share in the improvements totals \$63,000. The existing runway cannot be lengthened without compliance to the current design standards requiring 240 feet between a runway and taxiway.

Alternative 5--Relocate the airport

- The fifth and final alternative of relocating the airport and building a new 5,000 foot runway was found to be the most costly (\$2.3 million to the Town of Arlington) and involve substantial obstacles. There is an existing 30 minute rule stating that no general aviation airport can be built within 30 minutes driving time of an existing airport. With the completion of the Paul Barrett Parkway, the Millington Municipal Airport will be 15 minutes away. Should the Town decide that a new airport is necessary, justifications would have to be made and an airport master plan completed.

Other information contained in this study such as airport background, the Town of Arlington's Economic Base, survey data of airport users and other area businesses, the economic impact of the airport, general aviation background and its role in economic development and pilot profiles are all included to provide more insight for the decision making process. Many of these topics are very difficult to quantify and are, therefore, not included in the cost-benefit analyses.

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Personal Communications

Town of Arlington Administration:

George Horton - Mayor
Don May - Town Superintendent
Dona Watts - Town Recorder
Cathy Durant - Town Clerk
Wymon Dykes - Airport Committee

Town of Arlington:

Don Furr - Local Business Owner and President of the Local Chapter of the
AOPA Support Group
A.I. Guron - Fixed Base Operator at Arlington Municipal Airport

Federal Aviation Administration--Airport District Office:

Charles Harris
Cager Swauncey

Tennessee Department of Transportation Aeronautics Division

Tom Burgess - Chief Engineer
Brian Caldwell - Transportation Planner
Ronnie Fitzgerald - Operations Specialist Supervisor

Olive Branch Airport Personnel
Charles W. Baker Airport Personnel

Appendix

**ARLINGTON AIRPORT SURVEY
SEPTEMBER 1997**

NOTE: ALL RESPONSES WILL BE KEPT CONFIDENTIAL. ONLY AGGREGATE DATA WILL BE INCLUDED IN THE REPORT.

1. DO YOU, OR YOUR BUSINESS, USE A LOCAL GENERAL AVIATION AIRPORT?

_____ YES

_____ NO

IF NO, GO TO NUMBER 12

2. DO YOU USE THE AIRPORT FOR PERSONAL, BUSINESS PURPOSES, OR BOTH?

_____ PERSONAL _____ %

_____ BUSINESS _____ %

3. A) DO YOU OR YOUR BUSINESS OWN AIRCRAFT?

_____ YES

_____ NO

_____ BUSINESS

_____ PERSONAL

B) IF YES, HOW MANY AND WHAT TYPE?

C) IF NOT, DO YOU PLAN TO ACQUIRE AN AIRPLANE IN THE NEXT FIVE YEARS?

_____ YES

_____ NO

4. A) DO YOU USE THE ARLINGTON AIRPORT?

_____ YES

_____ NO

B) IF YES, HOW MANY ROUNDTRIPS PER YEAR? _____

C) IF NO, WHY NOT? _____

D) IF YOU USE ANOTHER AIRPORT, WHICH ONE?

5. PLEASE ESTIMATE THE NUMBER OF PEOPLE ASSOCIATED WITH YOUR BUSINESS (CLIENTS, EMPLOYEES, OR GUESTS) WHO USE THE ARLINGTON AIRPORT ANNUALLY AND THEIR AVERAGE STAY?

	NUMBER OF PEOPLE	AVERAGE STAY
CLIENTS/CUSTOMERS	_____	_____
EMPLOYEES	_____	_____
GUESTS	_____	_____
OTHER: _____	_____	_____
TOTAL	_____	_____

6. A) DOES YOUR BUSINESS SHIP PRODUCTS OR RECEIVE MATERIALS THROUGH THE ARLINGTON AIRPORT?

SHIPPING	_____	YES	_____	NO
RECEIVING	_____	YES	_____	NO

B) IF YES, WHAT IS THE APPROXIMATE ANNUAL VALUE?

SHIPPING	\$ _____
RECEIVING	\$ _____

7. A) WAS THE AVAILABILITY OF THE ARLINGTON AIRPORT A SIGNIFICANT FACTOR IN YOUR COMPANY'S DECISION TO LOCATE IN THE COUNTY?

_____	ESSENTIAL
_____	VERY IMPORTANT
_____	MODERATELY IMPORTANT
_____	NOT A CONSIDERATION

8. A) DO YOU HAVE PLANS FOR EXPANSION IN ARLINGTON IN THE NEXT 5 YEARS?

_____	YES	_____	NO
-------	-----	-------	----

B) IS THE EXISTENCE OF AN AIRPORT IN ARLINGTON A SIGNIFICANT FACTOR FOR YOU EXPANSION PLANS?

_____	YES	_____	NO
-------	-----	-------	----

C) HOW MANY NEW EMPLOYEES DO YOU EXPECT TO ADD? _____

D) WHAT WILL BE THE AVERAGE SALARY? \$ _____

E) WHAT LEVEL OF CAPITAL INVESTMENT DO YOU EXPECT FOR EXPANSION? \$ _____

9. WHAT PERCENT OF YOU SALES ARE DIRECTLY TIED TO USE OF THE ARLINGTON AIRPORT? _____ %

10. WHAT WOULD BE YOUR RESPONSE IF THE ARLINGTON AIRPORT WERE NO LONGER AVAILABLE TO YOU?

_____ SUBSTITUTE OTHER MODES OF TRANSPORTATION
_____ USE ANOTHER GENERAL AVIATION AIRPORT (SPECIFY)

_____ USE A COMMERCIAL AIRPORT (SPECIFY)

_____ MAKE FEWER TRIPS
_____ RELOCATE
_____ OTHER (SPECIFY) _____
_____ NOT APPLICABLE

11. A) IF YOU COULD CHANGE ANYTHING ABOUT THE AIRPORT, WHAT WOULD YOU CHANGE?

_____ SERVICES _____ FEES
_____ LOCATION _____ RUNWAY
_____ OTHER (IDENTIFY) _____

B) WHAT WOULD THESE IMPROVEMENTS MEAN TO YOUR BUSINESS?

12. DESCRIBE THE ROLE YOU BELIEVE THE ARLINGTON AIRPORT HAS PLAYED IN THE ECONOMIC DEVELOPMENT OF ARLINGTON OR SHELBY COUNTY.

13. ANY OTHER COMMENTS ABOUT THE AIRPORT OR AVIATION IN ARLINGTON?

14. WHICH OF THE FOLLOWING BEST DESCRIBES YOUR BUSINESS?

_____ AGRICULTURE _____ RETAIL TRADE
_____ CONSTRUCTION _____ WHOLESALE TRADE
_____ MANUFACTURING _____ SERVICES
_____ FINANCE, INSURANCE, REAL ESTATE
_____ OTHER _____

YEAR ESTABLISHED _____

15. WHAT IS YOUR MAIN PRODUCT OR SERVICE?

16. HOW MANY EMPLOYEES DOES YOUR BUSINESS HAVE?
FULL-TIME _____ PART-TIME _____
17. WHAT IS YOUR APPROXIMATE ANNUAL PAYROLL?
\$ _____
18. PLEASE CATEGORIZE YOUR ANNUAL SALES:
_____ LESS THAN \$1 MILLION
_____ \$1 MILLION TO \$10 MILLION
_____ \$10 MILLION TO \$100 MILLION
_____ OVER \$100 MILLION
19. PLEASE CLASSIFY YOUR MARKET:
_____ LOCAL
_____ REGIONAL
_____ NATIONAL
_____ INTERNATIONAL

THE FOLLOWING IS OPTIONAL. IT WILL BE USED ONLY IF THE TOWN OF ARLINGTON NEEDS TO CONTACT YOU FOR ADDITIONAL INFORMATION.

NAME: _____

COMPANY: _____

TELEPHONE: _____

THANK YOU FOR YOUR COOPERATION!

Table B-1
Revenue From Airport Disposition
(\$1998)

Assumptions:

Airport property sells at same proportion as remaining industrial park acreage sells.

Airport property and existing industrial park are of equal value and desirability.

FAA reimbursed 50% upon sale of land and no other selling costs are incurred by Arlington.

Discount Rate: 7.0%

Sales Price Per Acre: \$24,538 (4 Year Average)

Annual Absorption (acres): variable to: 20 ac. per year

Vacant Acres in Industrial Park	158.0 *
Airport Acreage	104.5
Total Available Acreage	262.5
Avg. Annual Absorption 1964-1998	2.94 Ac.

* Contract pending on the sale of 100 acres of the total 258 acres.

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW Proceeds From Airport Sale	CASH OUTFLOW FAA Payments	NET CASH FLOW Proceeds to Arlington	CUMULATIVE NET PRESENT VALUE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold				
1	1999	13.7	13.7	5.5	5.5	133,828	66,914	66,914	62,536
2	2000	13.7	27.4	5.5	10.9	133,828	66,914	66,914	120,982
3	2001	13.7	41.1	5.5	16.4	133,828	66,914	66,914	175,603
4	2002	13.7	54.8	5.5	21.8	133,828	66,914	66,914	226,652
5	2003	13.7	68.5	5.5	27.3	133,828	66,914	66,914	274,360
6	2004	13.7	82.2	5.5	32.7	133,828	66,914	66,914	318,948
7	2005	13.7	95.9	5.5	38.2	133,828	66,914	66,914	360,619
8	2006	13.7	109.6	5.5	43.6	133,828	66,914	66,914	399,563
9	2007	13.7	123.3	5.5	49.1	133,828	66,914	66,914	435,960
10	2008	13.7	137.0	5.5	54.5	133,828	66,914	66,914	469,976
11	2009	20.0	157.0	8.0	62.5	195,369	97,685	97,685	516,385
12	2010	20.0	177.0	8.0	70.5	195,369	97,685	97,685	559,758
13	2011	20.0	197.0	8.0	78.4	195,369	97,685	97,685	600,294
14	2012	20.0	217.0	8.0	86.4	195,369	97,685	97,685	638,177
15	2013	20.0	237.0	8.0	94.3	195,369	97,685	97,685	673,583
16	2014	20.0	257.0	8.0	102.3	195,369	97,685	97,685	706,672
17	2015	5.5	262.5	2.2	104.5	53,727	26,863	26,863	715,176
18	2016	0.0	262.5	0.0	104.5	0	0	0	715,176
19	2017	0.0	262.5	0.0	104.5	0	0	0	715,176
20	2018	0.0	262.5	0.0	104.5	0	0	0	715,176
21	2019	0.0	262.5	0.0	104.5	0	0	0	715,176
22	2020	0.0	262.5	0.0	104.5	0	0	0	715,176
23	2021	0.0	262.5	0.0	104.5	0	0	0	715,176
24	2022	0.0	262.5	0.0	104.5	0	0	0	715,176
25	2023	0.0	262.5	0.0	104.5	0	0	0	715,176
26	2024	0.0	262.5	0.0	104.5	0	0	0	715,176
27	2025	0.0	262.5	0.0	104.5	0	0	0	715,176
28	2026	0.0	262.5	0.0	104.5	0	0	0	715,176
29	2027	0.0	262.5	0.0	104.5	0	0	0	715,176
30	2028	0.0	262.5	0.0	104.5	0	0	0	715,176

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW	CASH OUTFLOW	NET CASH FLOW	CUMULATIVE NET PRESENT VALUE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold	Proceeds From Airport Sale	FAA Payments	Proceeds to Arlington	
31	2029	0.0	262.5	0.0	104.5	0	0	0	715,176
32	2030	0.0	262.5	0.0	104.5	0	0	0	715,176
33	2031	0.0	262.5	0.0	104.5	0	0	0	715,176
34	2032	0.0	262.5	0.0	104.5	0	0	0	715,176
35	2033	0.0	262.5	0.0	104.5	0	0	0	715,176
36	2034	0.0	262.5	0.0	104.5	0	0	0	715,176
37	2035	0.0	262.5	0.0	104.5	0	0	0	715,176
38	2036	0.0	262.5	0.0	104.5	0	0	0	715,176
39	2037	0.0	262.5	0.0	104.5	0	0	0	715,176
40	2038	0.0	262.5	0.0	104.5	0	0	0	715,176
Totals		262.5		104.5		2,564,221	1,282,111	1,282,111	
Net Present Value to Town of Arlington								715,176	
Net Present Value / Acre								6,844	
Current Price / Acre Equivalent to NPV								13,688	

NOTES:

Total Acres Sold - Represents total acreage sold in existing Arlington Industrial Park (258 acres remaining) and the current airport property.

Airport Acres Sold - Estimated proportion of total acres sold that are airport property. $104.5/262.5 = 39.8\%$.

Proceeds From Airport Sale - Airport acres sold times price per acre.

FAA Payments - 50% of proceeds from airport sale.

Proceeds to Arlington - 50% of proceeds from airport sale.

Cumulative Net Present Value - Annual cumulative value of proceeds to Arlington discounted at 7%.

Table B-2
Revenue From Airport Disposition
(\$1998)

Assumptions:

Airport property sells at same proportion as remaining industrial park acreage sells.

Airport property and existing industrial park are of equal value and desirability.

FAA reimbursed 50% upon sale of land and no other selling costs are incurred by Arlington.

Discount Rate: 7.0%

Sales Price Per Acre: \$45,000 (Upper Estimate)

Annual Absorption (acres): variable to: 20 ac. per year

Vacant Acres in Industrial Park	158.0 *
Airport Acreage	104.5
Total Available Acreage	262.5
Avg. Annual Absorption 1964-1998	2.94 Ac.

* Contract pending on the sale of 100 acres of the total 258 acres.

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW Proceeds From Airport Sale	CASH OUTFLOW FAA Payments	NET CASH Proceeds to Arlington	FLC CUMULATIVE NET PRESENT VALUE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold				
1	1999	13.7	13.7	5.5	5.5	245,426	122,713	122,713	114,685
2	2000	13.7	27.4	5.5	10.9	245,426	122,713	122,713	221,867
3	2001	13.7	41.1	5.5	16.4	245,426	122,713	122,713	322,037
4	2002	13.7	54.8	5.5	21.8	245,426	122,713	122,713	415,654
5	2003	13.7	68.5	5.5	27.3	245,426	122,713	122,713	503,147
6	2004	13.7	82.2	5.5	32.7	245,426	122,713	122,713	584,916
7	2005	13.7	95.9	5.5	38.2	245,426	122,713	122,713	661,335
8	2006	13.7	109.6	5.5	43.6	245,426	122,713	122,713	732,755
9	2007	13.7	123.3	5.5	49.1	245,426	122,713	122,713	799,503
10	2008	13.7	137.0	5.5	54.5	245,426	122,713	122,713	861,884
11	2009	20.0	157.0	8.0	62.5	358,286	179,143	179,143	946,993
12	2010	20.0	177.0	8.0	70.5	358,286	179,143	179,143	1,026,535
13	2011	20.0	197.0	8.0	78.4	358,286	179,143	179,143	1,100,873
14	2012	20.0	217.0	8.0	86.4	358,286	179,143	179,143	1,170,347
15	2013	20.0	237.0	8.0	94.3	358,286	179,143	179,143	1,235,277
16	2014	20.0	257.0	8.0	102.3	358,286	179,143	179,143	1,295,959
17	2015	5.5	262.5	2.2	104.5	98,529	49,264	49,264	1,311,555
18	2016	0.0	262.5	0.0	104.5	0	0	0	1,311,555
19	2017	0.0	262.5	0.0	104.5	0	0	0	1,311,555
20	2018	0.0	262.5	0.0	104.5	0	0	0	1,311,555
21	2019	0.0	262.5	0.0	104.5	0	0	0	1,311,555
22	2020	0.0	262.5	0.0	104.5	0	0	0	1,311,555
23	2021	0.0	262.5	0.0	104.5	0	0	0	1,311,555
24	2022	0.0	262.5	0.0	104.5	0	0	0	1,311,555
25	2023	0.0	262.5	0.0	104.5	0	0	0	1,311,555
26	2024	0.0	262.5	0.0	104.5	0	0	0	1,311,555
27	2025	0.0	262.5	0.0	104.5	0	0	0	1,311,555
28	2026	0.0	262.5	0.0	104.5	0	0	0	1,311,555
29	2027	0.0	262.5	0.0	104.5	0	0	0	1,311,555
30	2028	0.0	262.5	0.0	104.5	0	0	0	1,311,555

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW	CASH OUTFLOW	NET CASH FLOW	CUMULATIVE NET PRESENT VALUE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold	Proceeds From Airport Sale	FAA Payments	Proceeds to Arlington	
31	2029	0.0	262.5	0.0	104.5	0	0	0	1,311,555
32	2030	0.0	262.5	0.0	104.5	0	0	0	1,311,555
33	2031	0.0	262.5	0.0	104.5	0	0	0	1,311,555
34	2032	0.0	262.5	0.0	104.5	0	0	0	1,311,555
35	2033	0.0	262.5	0.0	104.5	0	0	0	1,311,555
36	2034	0.0	262.5	0.0	104.5	0	0	0	1,311,555
37	2035	0.0	262.5	0.0	104.5	0	0	0	1,311,555
38	2036	0.0	262.5	0.0	104.5	0	0	0	1,311,555
39	2037	0.0	262.5	0.0	104.5	0	0	0	1,311,555
40	2038	0.0	262.5	0.0	104.5	0	0	0	1,311,555
Totals		262.5		104.5		4,702,500	2,351,250	2,351,250	
Net Present Value to Town of Arlington								1,311,555	
Net Present Value / Acre								12,551	
Current Price / Acre Equivalent to NPV								25,102	

NOTES:

Total Acres Sold - Represents total acreage sold in existing Arlington Industrial Park (258 acres remaining) and the current airport property.

Airport Acres Sold - Estimated proportion of total acres sold that are airport property. $104.5/262.5 = 39.8\%$.

Proceeds From Airport Sale - Airport acres sold times price per acre.

FAA Payments - 50% of proceeds from airport sale.

Proceeds to Arlington - 50% of proceeds from airport sale.

Cumulative Net Present Value - Annual cumulative value of proceeds to Arlington discounted at 7%.

Table B-3
Revenue From Airport Disposition
(\$1998)

Assumptions:

Airport property sells at same proportion as remaining industrial park acreage sells.

Airport property and existing industrial park are of equal value and desirability.

FAA reimbursed 50% upon sale of land and no other selling costs are incurred by Arlington.

Discount Rate: 7.0%

Sales Price Per Acre: \$24,538 (4 Year Average)

Annual Absorption (acres): variable to: 20 ac. per year

Vacant Acres in Industrial Park	158.0 *
Airport Acreage (net of public use)	83.0
Total Available Acreage	241.0
Avg. Annual Absorption 1964-1998	2.94 Ac.

* Contract pending on the sale of 100 acres of the total 258 acres.

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW CASH OUTFLOW		NET CASH FLOW	CUMULATIVE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold	Proceeds From Airport Sale	FAA Payments	Proceeds to Arlington	NET PRESENT VALUE
1	1999	13.7	13.7	4.7	4.7	115,777	321,672	(205,895)	(192,426)
2	2000	13.7	27.4	4.7	9.4	115,777	57,888	57,888	(141,864)
3	2001	13.7	41.1	4.7	14.2	115,777	57,888	57,888	(94,610)
4	2002	13.7	54.8	4.7	18.9	115,777	57,888	57,888	(50,447)
5	2003	13.7	68.5	4.7	23.6	115,777	57,888	57,888	(9,173)
6	2004	13.7	82.2	4.7	28.3	115,777	57,888	57,888	29,400
7	2005	13.7	95.9	4.7	33.0	115,777	57,888	57,888	65,450
8	2006	13.7	109.6	4.7	37.7	115,777	57,888	57,888	99,141
9	2007	13.7	123.3	4.7	42.5	115,777	57,888	57,888	130,629
10	2008	13.7	137.0	4.7	47.2	115,777	57,888	57,888	160,056
11	2009	20.0	157.0	6.9	54.1	169,017	84,508	84,508	200,206
12	2010	20.0	177.0	6.9	61.0	169,017	84,508	84,508	237,728
13	2011	20.0	197.0	6.9	67.8	169,017	84,508	84,508	272,796
14	2012	20.0	217.0	6.9	74.7	169,017	84,508	84,508	305,570
15	2013	20.0	237.0	6.9	81.6	169,017	84,508	84,508	336,200
16	2014	4.0	241.0	1.4	83.0	33,803	16,902	16,902	341,925
17	2015	0.0	241.0	0.0	83.0	0	0	0	341,925
18	2016	0.0	241.0	0.0	83.0	0	0	0	341,925
19	2017	0.0	241.0	0.0	83.0	0	0	0	341,925
20	2018	0.0	241.0	0.0	83.0	0	0	0	341,925
21	2019	0.0	241.0	0.0	83.0	0	0	0	341,925
22	2020	0.0	241.0	0.0	83.0	0	0	0	341,925
23	2021	0.0	241.0	0.0	83.0	0	0	0	341,925
24	2022	0.0	241.0	0.0	83.0	0	0	0	341,925
25	2023	0.0	241.0	0.0	83.0	0	0	0	341,925
26	2024	0.0	241.0	0.0	83.0	0	0	0	341,925
27	2025	0.0	241.0	0.0	83.0	0	0	0	341,925
28	2026	0.0	241.0	0.0	83.0	0	0	0	341,925
29	2027	0.0	241.0	0.0	83.0	0	0	0	341,925
30	2028	0.0	241.0	0.0	83.0	0	0	0	341,925

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW	CASH OUTFLOW	NET CASH FLOW	CUMULATIVE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold	Proceeds From Airport Sale	FAA Payments	Proceeds to Arlington	NET PRESENT VALUE
31	2029	0.0	241.0	0.0	83.0	0	0	0	341,925
32	2030	0.0	241.0	0.0	83.0	0	0	0	341,925
33	2031	0.0	241.0	0.0	83.0	0	0	0	341,925
34	2032	0.0	241.0	0.0	83.0	0	0	0	341,925
35	2033	0.0	241.0	0.0	83.0	0	0	0	341,925
36	2034	0.0	241.0	0.0	83.0	0	0	0	341,925
37	2035	0.0	241.0	0.0	83.0	0	0	0	341,925
38	2036	0.0	241.0	0.0	83.0	0	0	0	341,925
39	2037	0.0	241.0	0.0	83.0	0	0	0	341,925
40	2038	0.0	241.0	0.0	83.0	0	0	0	341,925
Totals		241.0		83.0		2,036,654	1,282,111	754,543	
Net Present Value to Town of Arlington								341,925	
Net Present Value / Acre								4,120	
Current Price / Acre Equivalent to NPV								8,239	

NOTES:

Total Acres Sold - Represents total acreage sold in existing Arlington Industrial Park (258 acres remaining) and the current airport property.

Airport Acres Sold - Estimated proportion of total acres sold that are airport property. $104.5/262.5 = 39.8\%$.

Proceeds From Airport Sale - Airport acres sold times price per acre.

FAA Payments - 50% of proceeds from airport sale.

Proceeds to Arlington - 50% of proceeds from airport sale.

Cumulative Net Present Value - Annual cumulative value of proceeds to Arlington discounted at 7%.

Table B-4
Revenue From Airport Disposition
(\$1998)

Assumptions:

Airport property sells at same proportion as remaining industrial park acreage sells.

Airport property and existing industrial park are of equal value and desirability.

FAA reimbursed 50% upon sale of land and no other selling costs are incurred by Arlington.

Discount Rate: 7.0%
Sales Price Per Acre: \$45,000 (Upper Estimate)
Annual Absorption (acres): variable to: 20 ac. per year

Vacant Acres in Industrial Park	158.0 *
Airport Acreage (net of public use)	83.0
Total Available Acreage	241.0
Avg. Annual Absorption 1964-1998	2.94 Ac.

* Contract pending on the sale of 100 acres of the total 258 acres.

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW/CASH OUTFLOW		NET CASH FLOW	CUMULATIVE NET PRESENT VALUE
		Total Acres Sold	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold	Proceeds From Airport Sale	FAA Payments	Proceeds to Arlington	
1	1999	13.7	13.7	4.7	4.7	212,322	589,911	(377,589)	(352,887)
2	2000	13.7	27.4	4.7	9.4	212,322	106,161	106,161	(260,162)
3	2001	13.7	41.1	4.7	14.2	212,322	106,161	106,161	(173,504)
4	2002	13.7	54.8	4.7	18.9	212,322	106,161	106,161	(92,514)
5	2003	13.7	68.5	4.7	23.6	212,322	106,161	106,161	(16,823)
6	2004	13.7	82.2	4.7	28.3	212,322	106,161	106,161	53,917
7	2005	13.7	95.9	4.7	33.0	212,322	106,161	106,161	120,028
8	2006	13.7	109.6	4.7	37.7	212,322	106,161	106,161	181,815
9	2007	13.7	123.3	4.7	42.5	212,322	106,161	106,161	239,559
10	2008	13.7	137.0	4.7	47.2	212,322	106,161	106,161	293,526
11	2009	20.0	157.0	6.9	54.1	309,959	154,979	154,979	367,155
12	2010	20.0	177.0	6.9	61.0	309,959	154,979	154,979	435,968
13	2011	20.0	197.0	6.9	67.8	309,959	154,979	154,979	500,279
14	2012	20.0	217.0	6.9	74.7	309,959	154,979	154,979	560,383
15	2013	20.0	237.0	6.9	81.6	309,959	154,979	154,979	616,554
16	2014	4.0	241.0	1.4	83.0	61,992	30,996	30,996	627,054
17	2015	0.0	241.0	0.0	83.0	0	0	0	627,054
18	2016	0.0	241.0	0.0	83.0	0	0	0	627,054
19	2017	0.0	241.0	0.0	83.0	0	0	0	627,054
20	2018	0.0	241.0	0.0	83.0	0	0	0	627,054
21	2019	0.0	241.0	0.0	83.0	0	0	0	627,054
22	2020	0.0	241.0	0.0	83.0	0	0	0	627,054
23	2021	0.0	241.0	0.0	83.0	0	0	0	627,054
24	2022	0.0	241.0	0.0	83.0	0	0	0	627,054
25	2023	0.0	241.0	0.0	83.0	0	0	0	627,054
26	2024	0.0	241.0	0.0	83.0	0	0	0	627,054
27	2025	0.0	241.0	0.0	83.0	0	0	0	627,054
28	2026	0.0	241.0	0.0	83.0	0	0	0	627,054
29	2027	0.0	241.0	0.0	83.0	0	0	0	627,054
30	2028	0.0	241.0	0.0	83.0	0	0	0	627,054

Project Year	Calendar Year	Sale of Industrial Park Acreage				CASH INFLOW	CASH OUTFLOW	NET CASH FLOW	CUMULATIVE NET PRESENT VALUE
		Total	Cumulative Acres Sold	Airport Acres Sold	Cumulative Airport Acres Sold	Proceeds	FAA Payments	Proceeds to Arlington	
		Acres Sold				From Airport Sale			
31	2029	0.0	241.0	0.0	83.0	0	0	0	627,054
32	2030	0.0	241.0	0.0	83.0	0	0	0	627,054
33	2031	0.0	241.0	0.0	83.0	0	0	0	627,054
34	2032	0.0	241.0	0.0	83.0	0	0	0	627,054
35	2033	0.0	241.0	0.0	83.0	0	0	0	627,054
36	2034	0.0	241.0	0.0	83.0	0	0	0	627,054
37	2035	0.0	241.0	0.0	83.0	0	0	0	627,054
38	2036	0.0	241.0	0.0	83.0	0	0	0	627,054
39	2037	0.0	241.0	0.0	83.0	0	0	0	627,054
40	2038	0.0	241.0	0.0	83.0	0	0	0	627,054
Totals		241.0		83.0		3,735,000	2,351,250	1,383,750	
Net Present Value to Town of Arlington								627,054	
Net Present Value / Acre								7,555	
Current Price / Acre Equivalent to NPV								15,110	

NOTES:

Total Acres Sold - Represents total acreage sold in existing Arlington Industrial Park (258 acres remaining) and the current airport property.

Airport Acres Sold - Estimated proportion of total acres sold that are airport property. $104.5/262.5 = 39.8\%$.

Proceeds From Airport Sale - Airport acres sold times price per acre.

FAA Payments - 50% of proceeds from airport sale.

Proceeds to Arlington - 50% of proceeds from airport sale.

Cumulative Net Present Value - Annual cumulative value of proceeds to Arlington discounted at 7%.

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