

**Airport Economic Impact Analysis**  
For the proposed  
**West Metro**  
**Regional Airport**  
April 2004

Prepared for:  
**Greater Dallas County Development Alliance**

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## **EXECUTIVE SUMMARY**

The operation of the Regional Airport would act as a magnet to attract a wide range of industrial and commercial investments within the region, affecting the economy through higher income levels, regional tax revenues, infrastructure improvements and an inflow of capital investment.

### **Projected Real Estate Impact**

- From 1995-2003, commercial and industrial property tax valuations in the Service Area grew at a compounded annual rate of 8.75%. If the regional airport is operational by 2008, we expect the business property valuation to grow by an additional 1.5% per year. Over the twenty-year period, this will generate an additional \$48.3 billion in taxable business valuations and potentially \$1.8 billion in additional property tax receipts (in 2003 dollars) for the county and the communities.
- On completion of phase three by 2028, the annual increase in commercial and industrial property valuation will have reached \$7.8 billion (in 2003 dollars). The annual increase in property tax receipts will be \$285 million more than the expected growth without the airport.
- We expect that this commercial and industrial growth will also drive growth in residential property valuation and tax receipts in the region.
- The growth in industrial and commercial property value is an indicator of the expected, but more difficult to measure, growth in employment, income and retail sales.

### **Projected Airport Construction and Operations Impact**

- The construction and operation activities will affect the Service Area by increasing sales to local vendors by \$79.9 million (2003 dollars). Over the 20-year period, it will add 895 jobs in the region and a payroll of \$31.7 million - an average of 45 jobs per year. This does not include any associated impact in the surrounding area.

### **Rationale for the Airport**

- Population: In the 1990's, the population of Dallas County grew 21% compared to the nation's 7% and the state's 2%. From 2000-2003, Dallas County was the 74<sup>th</sup> fastest growing county in the nation.
- Income: Dallas County's per capita income level is still only 86% of its neighboring Polk County and 96% of the national average. A regional airport will attract greater industrial and commercial growth and higher wage jobs to the area.
- Employment: Since 1990, employment growth in Dallas and Polk Counties, respectively, was 48% and 18%, compared to 16% for the nation and 11% for the state. The area is poised for substantial economic growth and a regional airport will provide a valuable infrastructure component to facilitate that growth.

### **Economic Impact of the Regional Airport on other Airports**

- There are currently 457 aircraft registered to owners in Dallas and Polk Counties. In about 20 years, we expect that number to increase by about half-again.
- We expect 68 of those current aircraft owners (or 15%) to find the Regional Airport geographically more attractive. Another 91 (or 20%) are within a competitive 20-mile market range.

### **Conclusions**

- For a very modest investment, the county and communities can provide the infrastructure that will generate an additional \$48.3 billion in taxable business valuations and potentially \$1.8 billion in additional property tax receipts, \$80 million in airport-related business spending and \$32 million in payrolls over the next twenty years.
- If the local cost of constructing and operating the airport were as much as \$10 million over the 20-year period (and it may be only half of that amount), the projected tax revenues would be 180 times the public investment.
- In addition, the economic benefits of a new airport also includes reduced travel time for business and individual users, more convenient access, and the infrastructure for future job and income growth.

## **1. INTRODUCTION**

The purpose of this report is to assess the economic impact of the proposed new regional airport (the Regional Airport) in western Dallas County located at the intersection of Avenue R (R16) and Hickman Road (Highway 6) in Dallas County. This study will examine the contribution of this project to the economic development of the region. The Regional Airport would serve the aviation needs of passengers, air cargo and general aviation.

The Greater Dallas County Development Alliance intends for the Regional Airport to serve the general aviation passenger and air cargo markets currently served by Des Moines International Airport and the Ankeny Regional Airport. Des Moines International Airport will continue to serve the needs of the commercial aviation public, cargo shippers and military aircraft. The Ankeny Regional Airport currently has a waiting list for hangar space and their management expects the airport to be at or near capacity even after their current planned expansion is completed. The western suburbs and exurbs of Des Moines have been growing faster than any other area of the city and demographers projected for that to continue for the next 20 years. This market can support another regional reliever airport. This study quantifies the factors that justify that opinion.

This study evaluates the following factors for determining the economic impact:

- Constructing the Regional Airport;
- Operating the Regional Airport;
- Changes in impact on the Des Moines International and Ankeny airports; and
- Long-term economic development of the region measured by changes in the value of business property in the area.

We classify these economic impacts into three main categories:

- Direct Impacts – attributed to economic activities carried out at the Regional Airport;
- Indirect Impacts – expenditures of air travelers, airport management and subcontracted service providers; and
- Induced Impacts – the “multiplier effect” of money re-spent within the region.

This study did not include the following factors:

- Changes in the long-term value of residential property as a result of the economic development opportunities;
- Changes in employment driven by new firms that may move into the area;

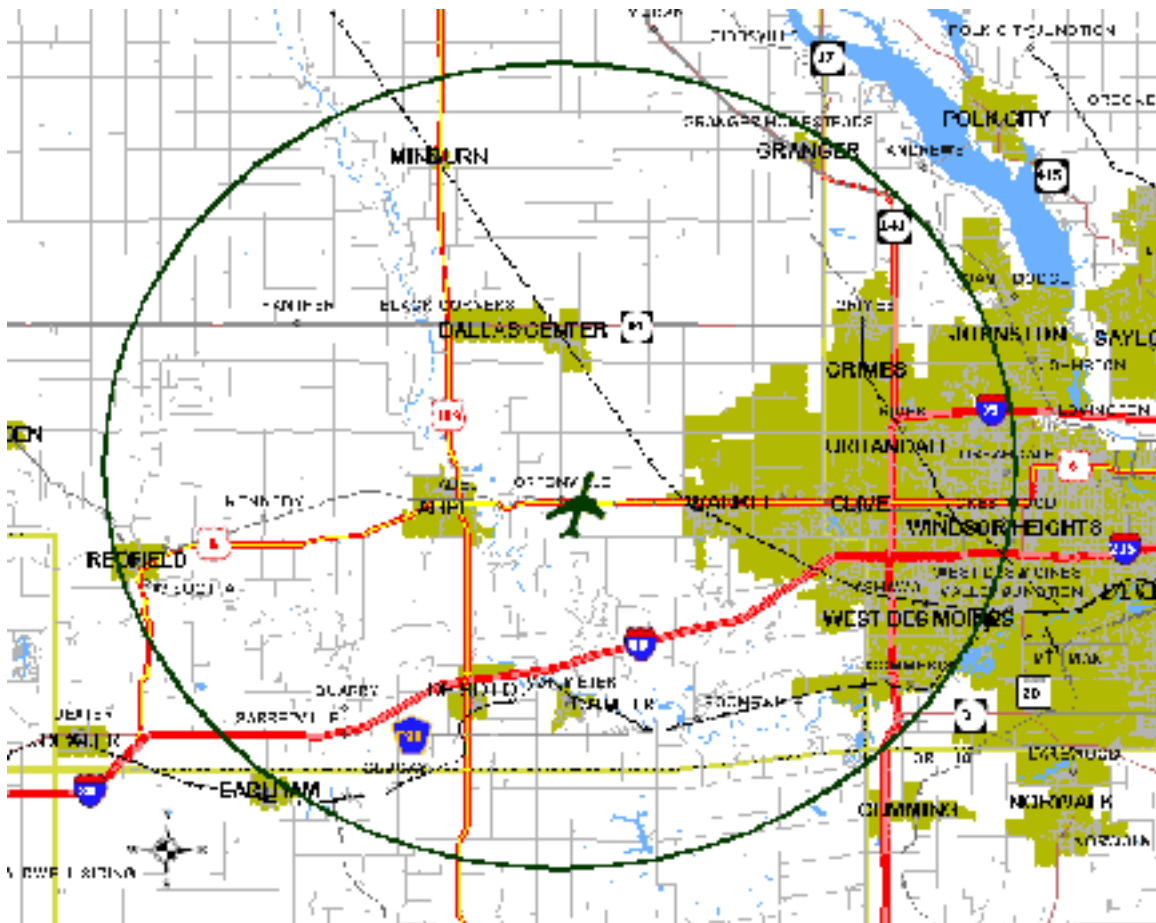
We did not include those factors because of the speculative nature of such forecasts.

In addition, the economic benefits projected in this analysis do not include any benefits to the communities from a tax-sharing agreement related to the airport business park. For that reason, our projections should be viewed as conservative and understated.

## **2. SOCIO-ECONOMIC DATA AND PROJECTIONS**

This section summarizes the socio-economic trends and forecasts for the region and for the counties which the Regional Airport will serve. The defined Primary Air Service Area for the Regional Airport is comprised of most of Dallas County and a portion of western Polk County, Iowa. Figure 2-1 displays the area.

**Figure 2-1. Air Service Area**

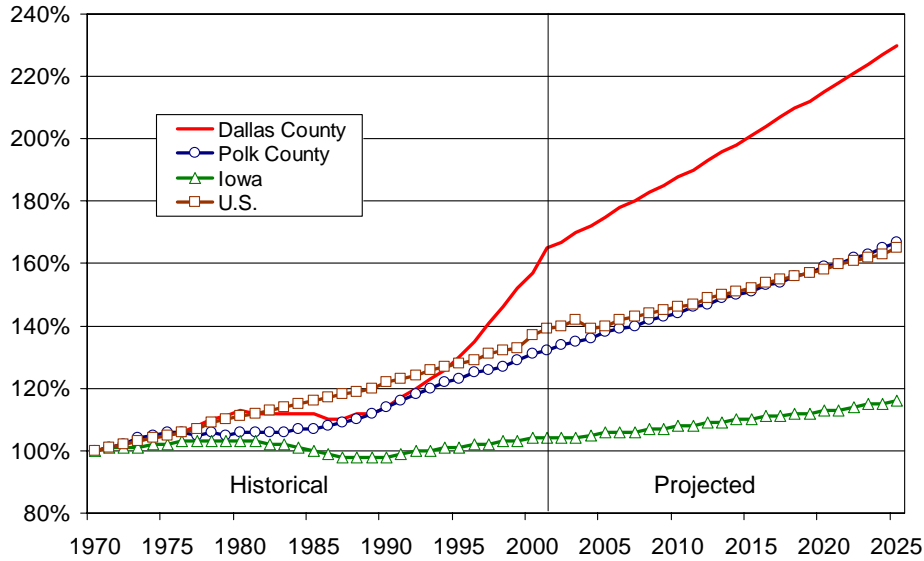


### **2.1 Historical and Projected Population Trends**

Figure 2-2 shows the population growth that has occurred within Dallas and Polk Counties compared to the state and the nation. It also shows the population growth projections through 2025 developed by Woods & Poole Economics, Inc., one of the nation's foremost demographic forecasting firms. The chart shows the pattern of growth indexed to 1970 as a base year. Polk County population growth has mirrored the nation over the 32-year period and Woods & Poole expect it to follow that same trend through 2025. The state's population has substantially lagged the nation and the demographers expect that trend to continue in the future. However, Dallas County has seen almost exponential growth since the mid-1980s and the Woods & Poole analysts expect to see that continue through 2025.



**Figure 2-2. Service Area Population Trends**



Source: U.S. Census Bureau and Woods & Poole Economics, Inc.

Table 2-1 outlines the historical population and the projections for the Air Service Area. The population of Dallas County has increased by more than one-third during the decade of the 1990s. In the decade of the 1960's, Dallas County was the state's 13<sup>th</sup> fastest growing county. By the 1990's it had moved up to fourth fastest. From 2000 to 2003, it was the fastest growing county in the state and the 74<sup>th</sup> fastest in the nation. The Woods & Poole forecasters have indicated a growth rate from 2000 to 2025 of 46% – more than doubling the nation's growth rate for that period.

**Table 2-1. Historical and Projected Service Area Population**

Year	Thousands				Indexed, 1970 = 100%			
	Dallas	Polk	Iowa	U.S.	Dallas	Polk	Iowa	U.S.
1970	26.1	287.1	2,825	205,052	100%	100%	100%	100%
1975	27.5	303.3	2,881	215,973	105%	106%	102%	105%
1980	29.5	303.8	2,914	227,225	113%	106%	103%	111%
1985	29.2	308.4	2,830	237,924	112%	107%	100%	116%
1990	29.9	328.5	2,777	249,464	114%	114%	98%	122%
1995	34.1	354.1	2,867	262,803	130%	123%	101%	128%
2000	41.1	375.8	2,926	281,422	157%	131%	104%	137%
2003	46.1	388.6	2,944	290,810	176%	135%	104%	142%
2010	49.1	414.4	3,045	299,862	188%	144%	108%	146%
2015	52.6	434.8	3,114	312,268	201%	151%	110%	152%
2020	56.2	456.0	3,190	324,927	215%	159%	113%	158%
2025	60.0	478.4	3,271	337,815	230%	167%	116%	165%

Sources: U.S. Census Bureau, Woods & Poole Economics, Inc.

## **2.2 Personal Income**

Figure 2-3 and Table 2-2 show a comparison of per capita personal income for the state of Iowa to the counties in the Regional Airport service area and to the United States. On average for the period 1970-2001, personal income in the nation, the state and the service area counties grew at an annual compounded growth rate of between 6.4% and 6.8% percent. However, in 2001, the Dallas County

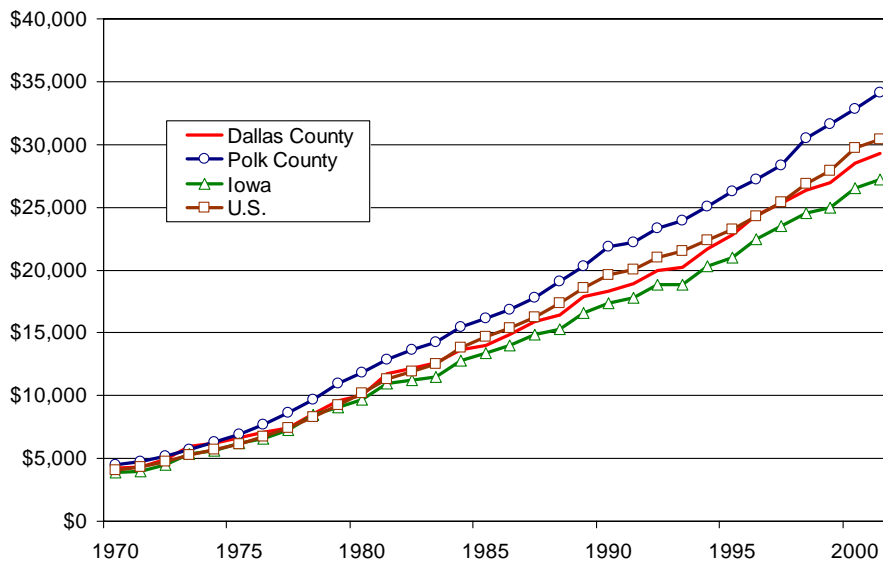
per capita personal income level (\$29,274) was 14% below the level in the more urbanized Polk County (\$34,151), and 4% below the nation's (\$30,413). The more rural areas of the state brought the statewide average (\$27,225) down to only 90% of the national level in 2001.

**Table 2-2. Per Capita Personal Income for Service Area, State and Nation**

Year	Dallas	Polk	Iowa	U.S.
1970	\$4,227	\$4,472	\$3,862	\$4,095
1975	\$6,671	\$6,954	\$6,192	\$6,155
1980	\$9,989	\$11,812	\$9,671	\$10,183
1985	\$13,965	\$16,166	\$13,395	\$14,705
1990	\$18,338	\$21,861	\$17,372	\$19,572
1995	\$22,794	\$26,237	\$20,985	\$23,255
2000	\$28,539	\$32,816	\$26,540	\$29,760
2001	\$29,274	\$34,151	\$27,225	\$30,413

Source: U.S. Department of Commerce, Bureau of Economic Analysis

**Figure 2-3. Per Capita Personal Income for Service Area, State and Nation**



Source: U.S. Department of Commerce, Bureau of Economic Analysis

The operation of a Regional Airport should help support a business infrastructure that would stimulate industrial and commercial development, create new jobs and ultimately raise the per capita income level.

### **2.3 Employment**

Table 2-3 shows the employment situation in the Regional Airport service area counties. The airport could help bring more employment and higher salary levels in sectors such as light manufacturing, business services, finance and trade.

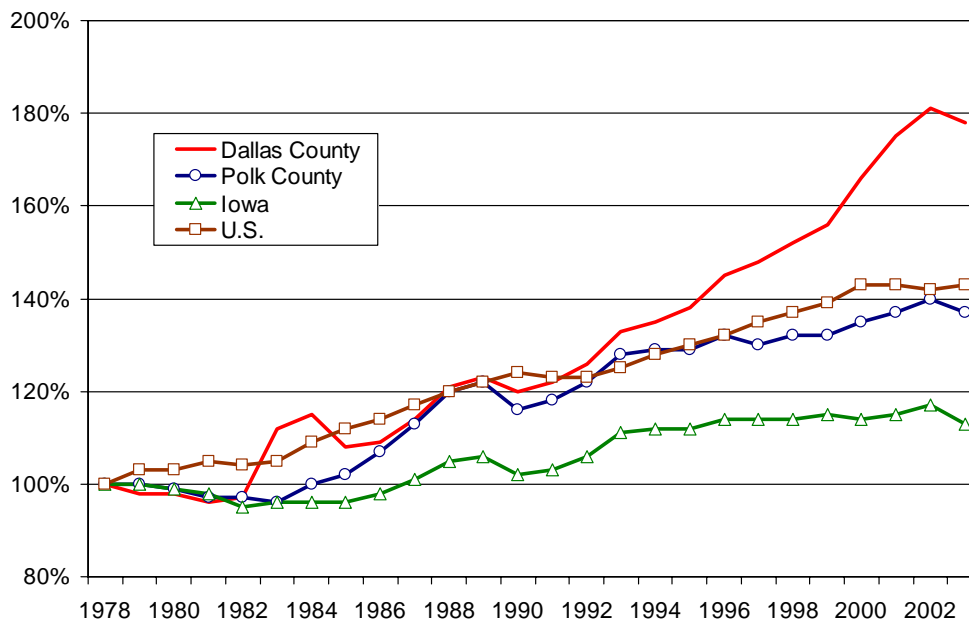
**Table 2-3. Service Area Employment (Thousands)**

Year	Dallas	Polk	State	U.S.
1978	13.0	157.5	1,361.0	85,846
1980	12.7	156.5	1,350.0	99,303
1985	14.1	160.1	1,300.0	107,150
1990	15.6	183.4	1,387.2	118,793
1995	17.9	203.9	1,520.2	124,900
2000	21.6	212.1	1,544.8	136,891
2001	22.7	215.4	1,569.2	136,933
2002	23.5	220.0	1,596.5	136,485
2003	23.1	216.0	1,540.1	137,736

Source: Iowa Workforce Development and U.S. Department of Labor, Bureau of Labor Statistics

Figure 2-4 displays the employment growth trend in the number of persons employed within the Air Service Area from 1978 through 2003.

**Figure 2-4. Service Area Employment (indexed, 1978 = 100%)**



Source: Iowa Workforce Development and U.S. Department of Labor, Bureau of Labor Statistics

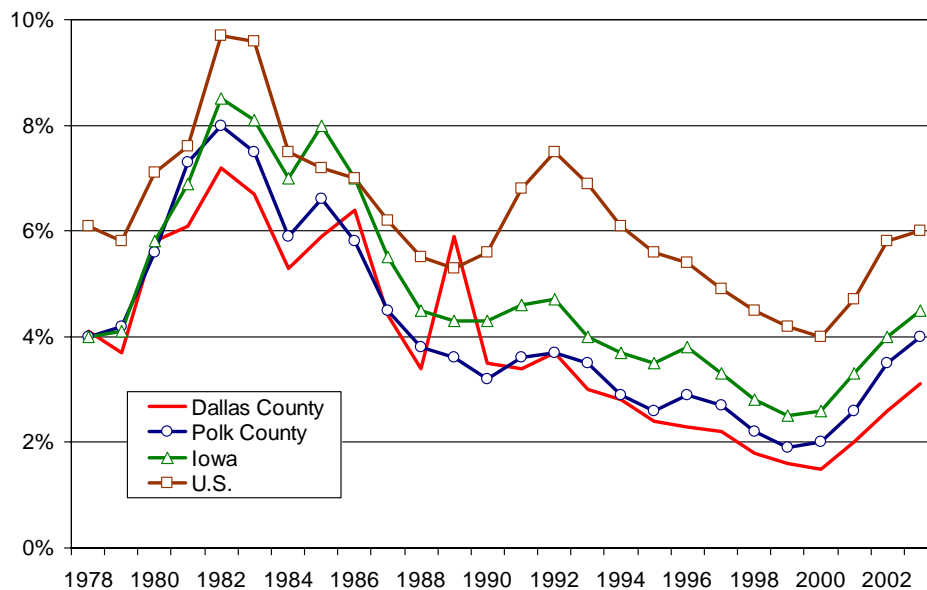
Table 2-4 and Figure 2-5 show the unemployment rate within the Air Service Area for the period 1978 through 2003. A Regional Airport will provide employment opportunities for the Air Service Area, which could further lower unemployment rates for the region.

**Table 2-4. Service Area Unemployment Rates**

Year	Dallas	Polk	State	U.S.
1978	4.1	4.0	4.0	8.5
1980	5.8	5.6	5.8	7.1
1985	5.9	6.6	8.0	7.2
1990	3.5	3.2	4.3	5.6
1995	2.4	2.6	3.5	5.6
2000	1.5	2.0	2.6	4.0
2001	2.0	2.6	3.3	4.7
2002	2.6	3.5	4.0	5.8
2003	3.1	4.0	4.5	6.0

Source: Iowa Workforce Development and U.S. Department of Labor, Bureau of Labor Statistics

**Figure 2-5. Service Area Unemployment Rates**



Source: Iowa Workforce Development and U.S. Department of Labor, Bureau of Labor Statistics

**2.4 Conclusions**

- **Population:** In the 1990's, the population of Dallas County grew 21% compared to the nation's 7% and the state's 2%. From 2000-2003, Dallas County was the 74<sup>th</sup> fastest growing county in the nation.
- **Income:** Dallas County's per capita income level is still only 86% of its neighboring Polk County and 96% of the national average.
- **Employment:** Since 1990, employment growth in Dallas and Polk Counties, respectively, was 48% and 18%, compared to 16% for the nation and 11% for the state.

### **3. ECONOMIC IMPACTS OF CONSTRUCTING THE REGIONAL AIRPORT**

#### **3.1 Construction Phases 1 and 2**

##### **3.1.1 Direct Impact of Construction Phases 1 and 2**

According to the *Airport Master Plan and Site Selection Study*, the construction contractors are to complete the project in three phases. Phase 1 – Initial Development was originally scheduled to begin in 2008 and be completed by 2013. This phase will consist of land acquisition and preparation, obstruction removal, fencing, a primary runway, taxiways, a ramp, tee hangar access, office and hangars, fuel storage and access road development and fixed base operators. In the Master Plan, the engineers projected 19 based aircraft in the first phase with 6,300 total annual operations. They estimated the cost to complete Phase 1 of \$16.46 million in 2003 dollars.

Phase 2 – Intermediate Development was originally scheduled to begin in 2013 and be completed by 2018. This phase will consist of a primary runway extension, additional taxiways, additional tee, and conventional hangar access. The engineers in the Master Plan projected 37 based aircraft during this phase with 12,600 total annual operations. They estimated the cost to complete Phase 2 at \$3.53 million in 2003 dollars.

The current plan is to begin both phases in 2008 and have them completed by 2009 for a combined direct cost of \$19,993,829 in 2003 dollars.

For the purposes of this analysis, we will use the engineer's 2003 cost estimates. However, we expect that inflation will drive up the cost of construction materials and labor during the period between 2003 and 2009 by a cumulative 13%. However, the availability of alternative and more efficient construction methods may offset some of those future cost increases.

**Table 3-1. Inflation-Adjusted Costs during the Three Construction Phases**

Year	CPI-03	%Chg CPI	Phases 1 & 2	Phase 3
2003	1.00	2.3%	\$19,993,829	\$5,800,657
2004	1.02	2.3%		
2005	1.04	2.1%		
2006	1.07	2.1%		
2007	1.09	2.0%		
2008	1.11	2.0%	\$22,189,812	
2009	1.13	2.0%	\$22,625,909	
2010	1.15	1.9%		
2011	1.18	1.9%		
2012	1.20	1.9%		
2013	1.22	1.8%		
2014	1.24	1.8%		
2015	1.26	1.8%		
2016	1.28	1.7%		
2017	1.31	1.7%		
2018	1.33	1.7%		\$7,702,974

Source: Projection by Strategic Economics Group based on U.S. Department of Labor data

Table 3-1 shows the effect that inflation would have on the initial cost estimates, based on a linear

extrapolation of the trend for the period 1990-2003. The pattern of consumer cost inflation during the 1990-projected 2028 is expected to mirror the projected Engineering News-Record Construction Cost Index.

With the expected inflationary increase, the cost of completing Phase 3 (currently planned for 2018) would be 33% higher than the \$5.8 million 2003 cost estimate.

**3.1.2 Indirect Impact of Construction Phases 1 and 2**

Indirect economic impacts of the Regional Airport are a result of vendor purchases during the construction phase. Since the contractors will purchase a portion of the labor and construction materials within the service area, those dollars will affect other area businesses.

We applied the IMPLAN SAM II regional multipliers (see Appendix A) for the Air Service Area to the costs for Phases 1 and 2 of the project to obtain the indirect economic impact of these phases of the construction of the airport. Table 3-2 shows the indirect construction impacts.

**Table 3-2. Indirect Impact of Construction Phases 1 and 2**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$47,272	\$17,870	\$28,635	1.2
Mining	\$1,163	\$444	\$761	0.0
Construction	\$43,303	\$26,636	\$29,136	0.6
Manufacturing	\$479,078	\$125,060	\$165,716	3.0
Tran.Utilities	\$429,762	\$128,125	\$217,004	3.0
Trade	\$1,309,049	\$575,751	\$948,219	17.3
Fin. Ins., R.Estate	\$510,593	\$147,583	\$335,378	3.6
Services	\$2,827,384	\$1,291,522	\$1,487,213	40.3
Government	\$55,878	\$36,271	\$35,528	0.6
Other	\$0	\$0	\$0	0.0
<b>Total</b>	<b>\$5,703,482</b>	<b>\$2,349,263</b>	<b>\$3,247,590</b>	<b>69.6</b>

Source: IMPLAN Model for Dallas County Airport region

**3.1.3 Induced Impact of Construction Phases 1 and 2**

The economic impact of the Regional Airport is not limited to the vendor purchases. The model identifies the direct and indirect impacts as the dollars become payrolls, and payrolls become additional consumer and business spending. These dollars will continue to circulate within the area, creating the induced effect. Table 3-3 shows the induced impacts attributable to the Regional Airport.

**Table 3-3. Induced Impact of Construction Phases 1 and 2**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$19,220	\$6,186	\$9,578	0.4
Mining	\$139	\$36	\$80	0.0
Construction	\$91,833	\$47,180	\$52,107	1.2
Manufacturing	\$241,147	\$46,474	\$68,247	1.1
Tran.Utilities	\$382,853	\$96,033	\$231,446	1.9
Trade	\$1,456,113	\$653,695	\$1,042,445	32.4
Fin. Ins., R.Estate	\$1,470,394	\$237,919	\$1,023,014	6.0
Services	\$1,845,031	\$997,331	\$1,150,902	33.8
Government	\$118,299	\$45,454	\$55,289	0.8
Other	\$13,842	\$13,865	\$13,865	1.3
<b>Total</b>	<b>\$5,638,871</b>	<b>\$2,144,173</b>	<b>\$3,646,974</b>	<b>78.9</b>

Source: IMPLAN Model for Dallas County Airport region

**3.1.4 Total Impact of Construction Phases 1 and 2**

Table 3-4 shows the construction activity that will occur at the beginning of the combined Phase 1 and 2 period. It will result in \$31.3 million in additional vendor purchases in the Service Area, an additional \$12.3 million payroll and jobs equivalent to an additional 328.7 person-years of work.

**Table 3-4. Total Impact of Construction Phases 1 and 2**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$66,492	\$24,057	\$38,212	1.6
Mining	\$1,302	\$480	\$841	0.0
Construction	\$21,128,966	\$7,863,001	\$8,740,270	181.9
Manufacturing	\$720,225	\$171,533	\$233,963	4.2
Tran.Utilities	\$812,616	\$224,158	\$448,450	4.9
Trade	\$2,765,162	\$1,229,445	\$1,990,665	49.7
Fin. Ins., R.Estate	\$1,980,987	\$385,503	\$1,358,392	9.6
Services	\$4,672,415	\$2,288,853	\$2,638,116	74.0
Government	\$174,177	\$81,726	\$90,817	1.4
Other	\$13,842	\$13,865	\$13,865	1.3
<b>Total</b>	<b>\$31,336,182</b>	<b>\$12,282,621</b>	<b>\$15,553,591</b>	<b>328.7</b>

Source: IMPLAN Model for Dallas County Airport region

**3.2 Construction Phase 3**

**3.2.1 Direct Impact of Construction Phase 3**

Phase 3 – Long-Range Development is currently scheduled to begin about 2018. It consists of additional land acquisition, a secondary runway, an additional taxiway and additional tee hangars and hangar access. The engineers in the Master Plan projected 55 based aircraft by 2018, increasing to 97 by 2028. They also projected annual operations to grow from 18,550 to 42,750 over the ten-year period. They estimated the construction cost for Phase 3 to equal \$5.8 million in 2003 dollars.

**3.2.2 Indirect Impact of Construction Phase 3**

The indirect economic impacts of the Regional Airport that will result from vendor purchases during Phase 3 include the effects of labor and construction materials that the contractors will purchase from within the service area. Those dollars will affect other area businesses. Table 3-5 shows the indirect construction impacts.

**Table 3-5. Indirect Impact of Construction Phase 3**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$13,852	\$5,236	\$8,391	0.4
Mining	\$341	\$130	\$223	0.0
Construction	\$12,689	\$7,805	\$8,538	0.2
Manufacturing	\$140,382	\$36,646	\$48,559	0.9
Tran.Utilities	\$125,931	\$37,544	\$63,588	0.9
Trade	\$383,585	\$168,710	\$277,853	5.1
Fin.Ins.R.Estate	\$149,617	\$43,246	\$98,274	1.0
Services	\$828,496	\$378,449	\$435,792	11.8
Government	\$16,374	\$10,628	\$10,411	0.2
Other	\$0	\$0	\$0	0.0
<b>Total</b>	<b>\$1,671,267</b>	<b>\$688,394</b>	<b>\$951,627</b>	<b>20.4</b>

Source: IMPLAN Model for Dallas County Airport region

**3.2.3 Induced Impact of Construction Phase 3**

Table 3-6 presents the induced impacts attributable to the Regional Airport.

**Table 3-6. Induced Impact of Construction Phase 3**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$5,632	\$1,813	\$2,806	0.1
Mining	\$41	\$10	\$24	0.0
Construction	\$26,909	\$13,825	\$15,269	0.3
Manufacturing	\$70,662	\$13,618	\$19,998	0.3
Tran.Utilities	\$112,186	\$28,140	\$67,820	0.6
Trade	\$426,678	\$191,549	\$305,463	9.5
Fin.Ins.R.Estate	\$430,863	\$69,716	\$299,769	1.8
Services	\$540,641	\$292,243	\$337,244	9.9
Government	\$34,665	\$13,319	\$16,201	0.2
Other	\$4,056	\$4,063	\$4,063	0.4
<b>Total</b>	<b>\$1,652,334</b>	<b>\$628,298</b>	<b>\$1,068,657</b>	<b>23.1</b>

Source: IMPLAN Model for Dallas County Airport region

**3.2.4 Total Impact of Construction Phase 3**

Table 3-7 shows the construction activity that will occur during the Phase 3 period will result in \$9.1 million in additional vendor purchases in the Service Area, generating an additional payroll of \$3.6 million and creating jobs equivalent to an additional 96.3 person-years during the Phase 3 construction period.



**Table 3-7. Total Impact of Construction Phase 3**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$19,484	\$7,049	\$11,197	0.5
Mining	\$381	\$141	\$246	0.0
Construction	5,840,258	\$2,304,061	\$2,561,124	53.3
Manufacturing	\$211,044	\$50,264	\$68,557	1.2
Tran.Utilities	\$238,117	\$65,684	\$131,407	1.4
Trade	\$810,263	\$360,259	\$583,316	14.6
Fin.Ins.R.Estate	\$580,480	\$112,962	\$398,044	2.8
Services	\$1,369,137	\$670,693	\$773,036	21.7
Government	\$51,038	\$23,948	\$26,612	0.4
Other	\$4,056	\$4,063	\$4,063	0.4
<b>Total</b>	<b>\$9,124,258</b>	<b>\$3,599,123</b>	<b>\$4,557,601</b>	<b>96.3</b>

Source: IMPLAN Model for Dallas County Airport region

### **3.3 The Total Impact of Construction**

Table 3-8 aggregates the three phases and shows the total impact of the construction activity. We expect the impact on the Service Area to generate \$15.9 million in additional payrolls, employ jobs equivalent to 425 person-years of work, and provide vendors in the area with \$40.5 million in additional sales. About three-fourths of this impact will occur during the first ten-year period.

**Table 3-8. Total Impact of Construction**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$85,976	\$31,106	\$49,409	2.1
Mining	\$1,683	\$621	\$1,087	0.0
Construction	\$26,969,224	\$10,167,062	\$11,301,394	235.2
Manufacturing	\$931,269	\$221,797	\$302,520	5.4
Tran.Utilities	\$1,050,733	\$289,842	\$579,857	6.3
Trade	\$3,575,425	\$1,589,704	\$2,573,981	64.3
Fin. Ins., R.Estate	\$2,561,467	\$498,465	\$1,756,436	12.4
Services	\$6,041,552	\$2,959,546	\$3,411,152	95.7
Government	\$225,215	\$105,674	\$117,429	1.8
Other	\$17,898	\$17,928	\$17,928	1.7
<b>Total</b>	<b>\$40,460,440</b>	<b>\$15,881,744</b>	<b>\$20,111,192</b>	<b>425.0</b>

Source: IMPLAN Model for Dallas County Airport region

### **3.4 Conclusions**

- All projections in this study are in 2003 constant dollars. Inflation will, obviously, increase cost estimates by the time construction is begun in 2008 and in 2018.
- The construction activity will affect the Service Area by increasing sales to local vendors by \$40.5 million, adding \$15.9 million in payrolls in the area and adding jobs equivalent to 425 person-years of work.
- Three-quarters of the impact will occur in the initial ten-year period.

**4. ECONOMIC IMPACTS OF OPERATING THE REGIONAL AIRPORT**

**4.1 Operations Phases 1 and 2**

The Master Plan includes a projected expenditures budget for the operations and maintenance of the Airport over the projected twenty-year period. It does not include the expenditures made in the region by contract management firms who provide services at the airport, but we have estimated that factor in our analysis. In Table 4-1, the Master Plan projects the expenditures that will be made by the Authority over the ten-year period. Our modeling uses the average yearly amount for that period to project the yearly indirect and induced impact on the area.

**Table 4-1 Projected Annual Operating Budget Phases 1 and 2**

Operating Expenses	Year 1	Year 2	Year 3	Year 4	Year 5	Average
Offsite Accounting Services	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377	\$3,186
Overhead - Manager & Public W.	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	\$10,618
Publications	\$250	\$258	\$265	\$273	\$281	\$265
Legal Services	\$4,000	\$4,120	\$4,244	\$4,371	\$4,502	\$4,247
Audit Services	\$4,000	\$4,120	\$4,244	\$4,371	\$4,502	\$4,247
General Insurance	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377	\$3,186
Property Insurance	\$500	\$515	\$530	\$546	\$563	\$531
Public Officials Insurance	\$4,000	\$4,120	\$4,244	\$4,371	\$4,502	\$4,247
Snow & Mowing	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138	\$26,546
Maintenance & Repairs	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628	\$5,309
NDB Maintenance	\$1,000	\$1,030	\$1,061	\$1,093	\$1,126	\$1,062
Utilities-General	\$4,000	\$4,120	\$4,244	\$4,371	\$4,502	\$4,247
Crop Expense	\$1,100	\$1,133	\$1,167	\$1,202	\$1,238	\$1,168
Miscellaneous	\$10,000	\$10,300	\$10,609	\$10,927	\$11,255	\$10,618
Capital Repair Fund	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Expenses</b>	<b>\$74,850</b>	<b>\$77,096</b>	<b>\$79,411</b>	<b>\$81,790</b>	<b>\$84,246</b>	<b>\$79,479</b>

Operating Expenses	Year 6	Year 7	Year 8	Year 9	Year 10	Average
Offsite Accounting Services	\$3,478	\$3,582	\$3,690	\$3,800	\$3,914	\$3,693
Overhead - Manager & Public W.	\$11,593	\$11,941	\$12,299	\$12,668	\$13,048	\$12,310
Publications	\$290	\$299	\$307	\$317	\$326	\$308
Legal Services	\$4,637	\$4,776	\$4,919	\$5,067	\$5,219	\$4,924
Audit Services	\$4,637	\$4,776	\$4,919	\$5,067	\$5,219	\$4,924
General Insurance	\$3,478	\$3,582	\$3,690	\$3,800	\$3,914	\$3,693
Property Insurance	\$580	\$597	\$615	\$633	\$652	\$615
Public Officials Insurance	\$4,637	\$4,776	\$4,919	\$5,067	\$5,219	\$4,924
Snow & Mowing	\$28,982	\$29,851	\$30,747	\$31,669	\$32,619	\$30,774
Maintenance & Repairs	\$5,796	\$5,970	\$6,149	\$6,334	\$6,524	\$6,155
NDB Maintenance	\$1,159	\$1,194	\$1,230	\$1,267	\$1,305	\$1,231
Utilities-General	\$4,637	\$4,776	\$4,919	\$5,067	\$5,219	\$4,924
Crop Expense	\$1,275	\$1,313	\$1,353	\$1,393	\$1,435	\$1,354
Miscellaneous	\$11,593	\$11,941	\$12,299	\$12,668	\$13,048	\$12,310
Capital Repair Fund	\$50,000	\$51,000	\$52,020	\$53,060	\$54,122	\$52,040
<b>Total Expenses</b>	<b>\$136,772</b>	<b>\$140,374</b>	<b>\$144,075</b>	<b>\$147,877</b>	<b>\$151,783</b>	<b>\$144,176</b>
<b>Total Expense Per Phase</b>						<b>\$1,118,274</b>

Source: West Metro Regional Airport Master Plan

A fixed base operator (FBO) provides most of the jobs associated with airport operation at general

use airports – most likely a contracted air service that provides maintenance and ancillary services, chartering, and sales. As a basis, the Master Plan constructed a likely budget for the new Dallas County airport (found in Tables 4-1 and 4-6), but did not include the expenditures made by the FBO. The basis for the expenditures, which were included in the Master Plan projection, is the budget for the tenth year of operation of the Ankeny airport.

In the feasibility study, the engineers estimated an operating budget (without debt servicing) for the Regional Airport based on about 43% of the size of the current Ankeny airport budget. We interviewed Ankeny airport personnel and determined that this budget did not include the costs associated with their FBO, Exec 1 Aviation. Exec 1 Aviation currently employs 20 people at the Ankeny airport.

Based on this 43% ratio, we expect the Regional Airport's FBO service in year 10 to employ a staff of nine. Discussions with the general aviation staff at the Iowa Department of Transportation suggested that an airport with the planned characteristics of the Dallas County airport would open operations with about four employees, but ramp up quickly with the projected growth in operations. Using this 43% ratio in a combined phase 1 and 2 level of operation, we anticipate the FBO would average nine employees during the first 10 years. The growth projected after phase 3 is completed would bring the Dallas County airport to a level of activity that is comparable to the Ankeny airport with 20 employees.

By combining information from the projected airport operating costs with the air service employment and staffing pattern, we developed an estimate of the combined public and private expenditures associated with operating the Regional Airport, including its contracted air service. We summarized the average direct effects for each of the operational phases in Table 4-2.

**Table 4-2. Average Annual Direct Effect for Each Operational Phase of the Airport**

Phases	Expenditures	Employment	Salaries
1 and 2	\$988,720	11	\$392,455
3	\$1,815,855	20	\$713,555

We used these estimates of the direct expenditures to generate the indirect and induced effects associated with them.

**4.1.1 Direct Impact of Operations Phases 1 and 2**

We estimate that the direct sales impact of operations and maintenance will average \$988,720 each year for the first ten years, based on the productivity ratios in the IMPLAN model. The Airport will drive an average of 11 direct jobs with a payroll of about \$392,455 per year.

**4.1.2 Indirect Impact of Operations Phases 1 and 2**

We estimate the indirect increase in vendor sales related in the Service Area for the Regional Airport to be \$1.5 million for the ten-year period with a payroll of \$725,180 and additional jobs equivalent to 21 person-years of work. (See Table 4-3)

**Table 4-3. Indirect Impact of Operations Phases 1 and 2**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$610	\$220	\$350	0.0
Mining	\$320	\$60	\$180	0.0
Construction	\$25,280	\$15,670	\$17,130	0.0
Manufacturing	\$100,560	\$29,910	\$38,700	1.0
Tran.Utilities	\$503,130	\$220,420	\$329,910	7.0
Trade	\$161,490	\$65,360	\$103,510	2.0
Fin. Ins., R.Estate	\$197,740	\$67,110	\$126,560	2.0
Services	\$496,130	\$318,540	\$361,990	9.0
Government	\$15,840	\$7,880	\$8,450	0.0
Other	\$0	\$0	\$0	0.0
<b>Total</b>	<b>\$1,501,110</b>	<b>\$725,180</b>	<b>\$986,780</b>	<b>21.0</b>

Source: IMPLAN Model for Dallas County Airport region

**4.1.3 Induced Impact of Operations Phases 1 and 2**

Our model indicates that the induced impacts for vendor sales are estimated to be \$2.5 million for the period. Additionally, the operations will create new jobs equivalent to 35 person-years of work with a total payroll of \$954,800.

**Table 4-4. Induced Impact of Operations Phases 1 and 2**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$8,560	\$2,750	\$4,260	0.0
Mining	\$60	\$20	\$40	0.0
Construction	\$40,880	\$21,010	\$23,200	1.0
Manufacturing	\$107,490	\$20,710	\$30,410	1.0
Tran.Utilities	\$170,650	\$42,790	\$103,190	1.0
Trade	\$648,610	\$291,190	\$464,360	14.0
Fin. Ins., R.Estate	\$654,730	\$105,990	\$455,490	3.0
Services	\$821,090	\$443,950	\$512,290	15.0
Government	\$52,680	\$20,240	\$24,620	0.0
Other	\$6,140	\$6,150	\$6,150	1.0
<b>Total</b>	<b>\$2,510,900</b>	<b>\$954,800</b>	<b>\$1,624,010</b>	<b>35.0</b>

Source: IMPLAN Model for Dallas County Airport region

**4.1.4 Total Impact of Operations Phases 1 and 2**

We estimate the total impact on vendor sales in the Area during the first ten years to be about \$14 million; the total payroll impact to be \$5.6 million and new jobs equivalent to 167 person-years of work.

**Table 4-5. Total Impact of Operations Phases 1 and 2**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$9,170	\$2,980	\$4,620	0.0
Mining	\$380	\$80	\$210	0.0
Construction	\$66,160	\$36,680	\$40,340	1.0
Manufacturing	\$208,050	\$50,620	\$69,120	1.0
Tran.Utilities	\$10,660,990	\$4,187,760	\$6,034,320	118.0
Trade	\$810,110	\$356,550	\$567,880	17.0
Fin. Ins., R.Estate	\$852,470	\$173,100	\$582,050	4.0
Services	\$1,317,230	\$762,490	\$874,280	24.0
Government	\$68,530	\$28,110	\$33,070	0.0
Other	\$6,140	\$6,150	\$6,150	1.0
<b>Total</b>	<b>\$13,999,220</b>	<b>\$5,604,520</b>	<b>\$8,212,020</b>	<b>167.0</b>

Source: IMPLAN Model for Dallas County Airport region

**4.2 Operations Phase 3**

Table 4-6 indicates the expenditures the Authority is projected to make over the ten-year third phase period. Again, in addition to these expenses incurred by the Authority, we assumed the impact of the FBO contracted services.

**Table 4-6. Projected Annual Operating Budget Phase 3**

Operating Expenses	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16
Offsite Accounting Services	\$4,032	\$4,153	\$4,277	\$4,406	\$4,538	\$4,674
Overhead - Manager & Public W.	\$13,439	\$13,842	\$14,258	\$14,685	\$15,126	\$15,580
Publications	\$336	\$346	\$356	\$367	\$378	\$389
Legal Services	\$5,376	\$5,537	\$5,703	\$5,874	\$6,050	\$6,232
Audit Services	\$5,376	\$5,537	\$5,703	\$5,874	\$6,050	\$6,232
General Insurance	\$4,032	\$4,153	\$4,277	\$4,406	\$4,538	\$4,674
Property Insurance	\$672	\$692	\$713	\$734	\$756	\$779
Public Officials Insurance	\$5,376	\$5,537	\$5,703	\$5,874	\$6,050	\$6,232
Snow & Mowing	\$33,598	\$34,606	\$35,644	\$36,713	\$37,815	\$38,949
Maintenance & Repairs	\$6,720	\$6,921	\$7,129	\$7,343	\$7,563	\$7,790
NDB Maintenance	\$1,344	\$1,384	\$1,426	\$1,469	\$1,513	\$1,558
Utilities-General	\$5,376	\$5,537	\$5,703	\$5,874	\$6,050	\$6,232
Crop Expense	\$1,478	\$1,523	\$1,568	\$1,615	\$1,664	\$1,714
Miscellaneous	\$13,439	\$13,842	\$14,258	\$14,685	\$15,126	\$15,580
Capital Repair Fund	\$55,204	\$56,308	\$57,434	\$58,583	\$59,755	\$60,950
<b>Total Expenses</b>	<b>\$155,798</b>	<b>\$159,918</b>	<b>\$164,152</b>	<b>\$168,502</b>	<b>\$172,972</b>	<b>\$177,565</b>

**Table 4-6. Projected Operating Budget Phase 3 (Continued)**

Operating Expenses	Year 17	Year 18	Year 19	Year 20	Average
Offsite Accounting Services	\$4,814	\$4,959	\$5,107	\$5,261	\$4,347
Overhead - Manager & Public W.	\$16,047	\$16,528	\$17,024	\$17,535	\$14,488
Publications	\$401	\$413	\$426	\$438	\$362
Legal Services	\$6,419	\$6,611	\$6,810	\$7,014	\$5,795
Audit Services	\$6,419	\$6,611	\$6,810	\$7,014	\$5,795
General Insurance	\$4,814	\$4,959	\$5,107	\$5,261	\$4,347
Property Insurance	\$802	\$826	\$851	\$877	\$724
Public Officials Insurance	\$6,419	\$6,611	\$6,810	\$7,014	\$5,795
Snow & Mowing	\$40,118	\$41,321	\$42,561	\$43,838	\$36,221
Maintenance & Repairs	\$8,024	\$8,264	\$8,512	\$8,768	\$7,244
NDB Maintenance	\$1,605	\$1,653	\$1,702	\$1,754	\$1,449
Utilities-General	\$6,419	\$6,611	\$6,810	\$7,014	\$5,795
Crop Expense	\$1,765	\$1,818	\$1,873	\$1,929	\$1,594
Miscellaneous	\$16,047	\$16,528	\$17,024	\$17,535	\$14,488
Capital Repair Fund	\$62,169	\$63,412	\$64,680	\$65,974	\$58,039
<b>Total Expenses</b>	<b>\$182,282</b>	<b>\$187,125</b>	<b>\$192,107</b>	<b>\$197,226</b>	<b>\$166,485</b>
<b>Total Expense Per Phase</b>					<b>\$821,342</b>

Source: West Metro Regional Airport Master Plan

**4.2.1 Direct Impact of Operations Phase 3**

We estimate that the direct impact of operations and maintenance will average \$1,815,855 each year for the last ten years of the 20-year planning period. The Airport will drive an average of 20 direct jobs each year with a payroll of about \$713,555 per year.

**4.2.2 Indirect Impact of Operations Phase 3**

We estimate the indirect impact on vendor sales in the Area to be \$2.7 million for the ten-year period with a total payroll of \$1.3 million and an increase in jobs equivalent to 39 person-years of work.

**Table 4-7. Indirect Impact of Operations Phase 3**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$1,110	\$400	\$640	0.0
Mining	\$580	\$120	\$320	0.0
Construction	\$45,970	\$28,490	\$31,150	1.0
Manufacturing	\$182,830	\$54,380	\$70,370	1.0
Tran.Utilities	\$914,790	\$400,760	\$599,830	13.0
Trade	\$293,630	\$118,840	\$188,210	4.0
Fin. Ins., R.Estate	\$359,530	\$122,020	\$230,110	3.0
Services	\$902,060	\$579,160	\$658,170	17.0
Government	\$28,800	\$14,320	\$15,360	0.0
Other	\$0	\$0	\$0	0.0
<b>Total</b>	<b>\$2,729,300</b>	<b>\$1,318,500</b>	<b>\$1,794,150</b>	<b>39.0</b>

Source: IMPLAN Model for Dallas County Airport region

### **4.2.3 Induced Impact of Operations Phase 3**

The operations of the Regional Airport will induce additional sales in the region of \$4.6 million during the second ten-year period. Additionally, it will create jobs equivalent to 64 person-years of work with a payroll of \$1.7 million.

**Table 4-8. Induced Impact of Operations Phase 3**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$15,560	\$5,010	\$7,750	0.0
Mining	\$110	\$30	\$70	0.0
Construction	\$74,330	\$38,200	\$42,180	1.0
Manufacturing	\$195,440	\$37,650	\$55,300	1.0
Tran.Utilities	\$310,270	\$77,810	\$187,610	2.0
Trade	\$1,179,300	\$529,440	\$844,300	26.0
Fin. Ins., R.Estate	\$1,190,420	\$192,710	\$828,160	5.0
Services	\$1,492,900	\$807,180	\$931,430	27.0
Government	\$95,790	\$36,790	\$44,760	1.0
Other	\$11,160	\$11,180	\$11,180	1.0
<b>Total</b>	<b>\$4,565,280</b>	<b>\$1,736,000</b>	<b>\$2,952,740</b>	<b>64.0</b>

Source: IMPLAN Model for Dallas County Airport region

### **4.2.4 Total Impact of Operations Phase 3**

We estimate the total economic impact of the third phase of operations to generate \$25 million in new vendor sales in the Area; the total payroll impact will be about \$10 million; and the new employment over the ten-year period to be equivalent to 303 person-years of work.

**Table 4-9. Total Impact of Operations Phase 3**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$16,670	\$5,410	\$8,390	0.0
Mining	\$700	\$150	\$380	0.0
Construction	\$120,300	\$66,680	\$73,340	2.0
Manufacturing	\$378,270	\$92,040	\$125,670	2.0
Tran.Utilities	\$19,383,610	\$7,614,110	\$10,971,490	214.0
Trade	\$1,472,920	\$648,280	\$1,032,510	30.0
Fin. Ins., R.Estate	\$1,549,950	\$314,730	\$1,058,270	8.0
Services	\$2,394,960	\$1,386,340	\$1,589,600	44.0
Government	\$124,600	\$51,110	\$60,120	1.0
Other	\$11,160	\$11,180	\$11,180	1.0
<b>Total</b>	<b>\$25,453,130</b>	<b>\$10,190,050</b>	<b>\$14,930,950</b>	<b>303.0</b>

Source: IMPLAN Model for Dallas County Airport region

## **4.3 Total Operations**

Tables 4-10 and 4-11 aggregate the three phases. We expect the impact on vendor sales in the Service Area, distributed over 20-years, to be about \$39 million or an average of \$2 million per year. The operations will generate about \$16 million in payrolls and will create new jobs equivalent to 470 person-years of work. If spread out over 20 years, that would be the equivalent of 23 additional jobs each year. However, about three-quarters of this impact will occur during the last ten years.

**Table 4-10. Total Impact of Operations**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$25,840	\$8,390	\$13,010	0.0
Mining	\$1,080	\$230	\$590	0.0
Construction	\$186,460	\$103,360	\$113,680	3.0
Manufacturing	\$586,320	\$142,660	\$194,790	3.0
Tran.Utilities	\$30,044,600	\$11,801,870	\$17,005,810	332.0
Trade	\$2,283,030	\$1,004,830	\$1,600,390	47.0
Fin. Ins., R.Estate	\$2,402,420	\$487,830	\$1,640,320	12.0
Services	\$3,712,190	\$2,148,830	\$2,463,880	68.0
Government	\$193,130	\$79,220	\$93,190	1.0
Other	\$17,300	\$17,330	\$17,330	2.0
<b>Total</b>	<b>\$39,452,350</b>	<b>\$15,794,570</b>	<b>\$23,142,970</b>	<b>470.0</b>

Source: IMPLAN Model for Dallas County Airport region

**Table 4-11. Average Annual Impact of Operations**

Sector	Total Sales	Labor Income	Value Added	Jobs
Agriculture	\$1,292	\$420	\$651	0.0
Mining	\$54	\$12	\$30	0.0
Construction	\$9,323	\$5,168	\$5,684	0.2
Manufacturing	\$29,316	\$7,133	\$9,740	0.2
Tran.Utilities	\$1,502,230	\$590,094	\$850,291	16.6
Trade	\$114,152	\$50,242	\$80,020	2.4
Fin. Ins., R.Estate	\$120,121	\$24,392	\$82,016	0.6
Services	\$185,610	\$107,442	\$123,194	3.4
Government	\$9,657	\$3,961	\$4,660	0.1
Other	\$865	\$867	\$867	0.1
<b>Total</b>	<b>\$1,972,619</b>	<b>\$789,728</b>	<b>\$1,157,150</b>	<b>23.4</b>

#### **4.4 Conclusions**

- The public budget projected by the Airport Authority accounts for only a part of the total spending that will occur at the airport site. A contracted fixed base operator will hire most of the employees and incur additional expenses.
- The airport operation (including the FBO) will create jobs equivalent to 470 person-years of work over the 20-year period with a combined payroll of nearly \$16 million. Vendors within the Service Area will see an increase in sales of \$39.5 million because of the airport operations.



**5. PROJECTED IMPACT OF THE REGIONAL AIRPORT ON ECONOMIC DEVELOPMENT**

**5.1 The Master Plan Projections**

In Sections 3 and 4, we examined the direct, indirect and induced impacts of the construction and operations of the new Regional Airport. In this section, we will look at the long-term economic development implications.

The engineers included a first approximation of the development impact in the Master Plan (reproduced in Table 5-1). That projection only addressed the expected impact on an industrial/commercial park adjacent to the airport property. The addition of a Regional Airport to the county will have a profound impact on commercial and industrial development in communities and townships far beyond the adjoining industrial/commercial park.

**Table 5-1. Master Plan Economic Development Projection**

Land Use	Potential Development (Acres)	Bldg Coverage	Bldg Area (Sq Ft)	Taxable Value per Sq Ft	Additional 2028 Taxable Value
Commercial	295	12%	1,542,024	\$75	\$115,651,800
Industrial	365	10%	1,589,940	\$50	\$79,497,000
Total	660	11%	3,131,964		\$195,148,800

Source: West Metro Regional Airport Master Plan

**5.2 A Reality Check**

We added the forecast for property valuation growth that was included in the Master Plan to the current taxable value of commercial and industrial property in Dallas County in order to project the future economic development impact of the Regional Airport. In the absence of any other growth in the value of commercial and industrial property, the compounded annual growth rate for that property between now and 2028 would be only 1.12% per year (see Table 5-2).

**Table 5-2. Comparing the Master Plan Projection to 2003 Actual Dallas County Valuations**

Land Use	Actual 2003 Taxable Valuation	Master Plan 2028 Taxable Value Projection	Projected 2028 Taxable Value	Total Percentage Growth	Compounded Annual Growth Rate
Commercial	\$564,579,300	\$115,651,800	\$680,231,100	20%	0.75%
Industrial	\$41,599,002	\$79,497,000	\$121,096,002	191%	4.37%
Total	\$606,178,302	\$195,148,800	\$801,327,102	32%	1.12%

Source: West Metro Regional Airport Master Plan and Dallas County Assessor

During the past eight years, the value of commercial and industrial property in Iowa grew at a compounded rate of 6.53% per year (see Table 5-3). For three of those years, the nation and Iowa was experiencing a business recession. For the purposes of this study, we will assume that over the next 25 years the growth rate for the state will at least match its growth over the past eight years.

**Table 5-3. Statewide Growth in Commercial and Industrial Property Value**

Land Use	1995	2003	Difference	Total Percentage Growth	Compounded Annual Growth Rate
Commercial	\$14,357,384,970	\$22,478,494,336	\$8,121,109,366	57%	5.76%
Industrial	\$2,734,929,176	\$3,811,109,984	\$1,076,180,808	39%	4.23%
Total	\$17,092,314,146	\$26,289,604,320	\$9,197,290,174	54%	6.53%

Source: State of Iowa, Department of Management

If the commercial and industrial property grew at a compounded annual rate of nearly seven percent, then projecting 1.12% growth rate for Dallas County seems far too low.

**Table 5-4. Recent Dallas County Growth in Commercial and Industrial Property Value**

Year	Valuation			Percent Change Year Ago		
	Commercial	Industrial	Total	Commercial	Industrial	Total
1995	\$189,695,919	\$30,912,252	\$220,608,171			
1996	\$226,725,287	\$32,917,518	\$259,642,805	19.52%	6.49%	17.69%
1997	\$253,543,240	\$32,511,152	\$286,054,392	11.83%	-1.23%	10.17%
1998	\$287,674,930	\$33,270,727	\$320,945,657	13.46%	2.34%	12.20%
1999	\$316,419,794	\$36,138,897	\$352,558,691	9.99%	8.62%	9.85%
2000	\$387,700,760	\$36,899,457	\$424,600,217	22.53%	2.10%	20.43%
2001*	\$459,130,160	\$40,857,132	\$499,987,292	18.42%	10.73%	17.75%
2002	\$515,581,070	\$42,801,482	\$558,382,552	12.30%	4.76%	11.68%
2003	\$564,579,300	\$41,599,002	\$606,178,302	9.50%	-2.81%	8.56%
2004	\$625,644,990	\$41,364,212	\$667,009,202	10.82%	-0.56%	10.04%
Compounded annual growth rate for 2001-2004				10.87%	0.41%	10.08%

Source: Dallas County Assessor

\* Note: In 2000, Dallas County hired a new assessor with more extensive background in business property assessment.

The Dallas County growth rate for commercial property valuation has exceeded the rate of growth for the same type of property in the Polk County portions of Clive, Urbandale and West Des Moines, but those communities experienced substantially greater industrial property growth.

**Table 5-5 Recent Polk County Service Area\* Growth in Business Property Values**

Year	Valuation			Percent Change Year Ago		
	Commercial	Industrial	Total	Commercial	Industrial	Total
1995	\$1,294,619,680	\$40,856,970	\$1,335,476,650			
1996	\$1,443,618,530	\$45,133,410	\$1,488,751,940	11.51%	10.47%	11.48%
1997	\$1,573,141,210	\$48,971,930	\$1,622,113,140	8.97%	8.50%	8.96%
1998	\$1,625,066,700	\$48,474,310	\$1,673,541,010	3.30%	-1.02%	3.17%
1999	\$1,832,968,564	\$54,300,150	\$1,887,268,714	12.79%	12.02%	12.77%
2000	\$1,910,894,510	\$55,435,810	\$1,966,330,320	4.25%	2.09%	4.19%
2001	\$2,089,262,220	\$63,596,930	\$2,152,859,150	9.33%	14.72%	9.49%
2002	\$2,182,257,580	\$64,549,350	\$2,246,806,930	4.45%	1.50%	4.36%
2003	\$2,369,192,130	\$68,090,540	\$2,437,282,670	8.57%	5.49%	8.48%
Compounded annual growth rate for 1995-2003				7.85%	6.59%	7.81%

Source: Polk County Assessor

\* Includes the Polk County segments of Clive, Urbandale and West Des Moines

### 5.3 Baseline Projection

While the value of Dallas County industrial property has grown at a minimal rate for the past four years, the value of commercial property has grown at nearly double the state rate. In order to project the change in property value that we expect to result from the opening of the Regional Airport, we need to project the 2008 levels as the baseline. Table 5-6 shows the amounts that we project for commercial and industrial valuation based on an extension of the 1995-2003 compounded annual rates for the entire Service Area.

**Table 5-6. Extrapolating the Service Area Commercial and Industrial Property Value**

Year	Valuation			Percent Change Year Ago		
	Commercial	Industrial	Total	Commercial	Industrial	Total
2003	\$2,933,771,430	\$109,689,542	\$3,043,460,972	8.75%	2.18%	8.49%
2004	\$3,186,721,432	\$113,947,943	\$3,300,317,277	8.62%	3.88%	8.44%
2005	\$3,463,620,595	\$118,908,319	\$3,581,708,326	8.69%	4.35%	8.53%
2006	\$3,766,544,584	\$124,186,757	\$3,889,302,043	8.75%	4.44%	8.59%
2007	\$4,098,086,228	\$129,804,355	\$4,225,684,521	8.80%	4.52%	8.65%
2008	\$4,461,107,032	\$135,783,616	\$4,593,707,307	8.86%	4.61%	8.71%
Compounded annual growth rate for 1995-2003				8.89%	5.45%	8.75%

Now let us consider several growth scenarios using the 2008 estimates as our baseline. The first scenario we should consider is that the current growth rates would continue after 2008 and the airport would have no positive impact on economic development in the Service Area.

**Table 5-7. Projecting the Baseline Growth Rate - Assuming No Airport Impact**

Year	Projected Valuation (Millions)			Projected Tax Receipts (Millions)		
	Commercial	Industrial	Total	Commercial	Industrial	Total
2008	\$4,461.1	\$135.8	\$4,593.7	\$169.5	\$4.5	\$174.0
2009	\$4,857.7	\$143.2	\$5,000.9	\$184.6	\$4.7	\$189.3
2010	\$5,289.5	\$151.0	\$5,440.5	\$201.0	\$5.0	\$206.0
2011	\$5,759.8	\$159.2	\$5,919.0	\$218.9	\$5.3	\$224.1
2012	\$6,271.8	\$167.9	\$6,439.7	\$238.3	\$5.5	\$243.9
2013	\$6,829.4	\$177.0	\$7,006.4	\$259.5	\$5.8	\$265.4
2014	\$7,436.5	\$186.7	\$7,623.2	\$282.6	\$6.2	\$288.7
2015	\$8,097.6	\$196.9	\$8,294.5	\$307.7	\$6.5	\$314.2
2016	\$8,817.5	\$207.6	\$9,025.1	\$335.1	\$6.9	\$341.9
2017	\$9,601.4	\$218.9	\$9,820.3	\$364.9	\$7.2	\$372.1
2018	\$10,455.0	\$230.8	\$10,685.8	\$397.3	\$7.6	\$404.9
2019	\$11,384.4	\$243.4	\$11,627.8	\$432.6	\$8.0	\$440.6
2020	\$12,396.5	\$256.7	\$12,653.2	\$471.1	\$8.5	\$479.5
2021	\$13,498.5	\$270.7	\$13,769.2	\$512.9	\$8.9	\$521.9
2022	\$14,698.6	\$285.4	\$14,984.0	\$558.5	\$9.4	\$568.0
2023	\$16,005.3	\$301.0	\$16,306.2	\$608.2	\$9.9	\$618.1
2024	\$17,428.1	\$317.4	\$17,745.5	\$662.3	\$10.5	\$672.7
2025	\$18,977.5	\$334.7	\$19,312.2	\$721.1	\$11.0	\$732.2
2026	\$20,664.6	\$352.9	\$21,017.5	\$785.3	\$11.6	\$796.9
2027	\$22,501.7	\$372.2	\$22,873.8	\$855.1	\$12.3	\$867.3
2028	\$24,502.1	\$392.4	\$24,894.5	\$931.1	\$13.0	\$944.0

Table 5-7 shows the yearly calculations, based on a \$38 per \$1,000 tax rate for property located in the communities and a \$28 per \$1,000 rate for property located in the township or rural areas of the county. In this analysis, we assumed that all of the commercial property would be located in the communities and that an equal amount of the industrial property growth would occur in the communities and in the rural areas.

**5.4 Projecting the Statewide Rates**

The second alternative scenario assumes that beginning in 2008 Dallas County will mirror the statewide growth rates for commercial and industrial property (found in Table 5-3). Table 5-8 shows the yearly calculations, based on the same assumptions about the distribution of property and tax rates, which we set in the previous scenario.

**Table 5-8. Projecting the State Growth Rate for the Service Area**

Year	Projected Valuation (Millions)			Projected Tax Receipts (Millions)		
	Commercial	Industrial	Total	Commercial	Industrial	Total
2008	\$4,461.1	\$135.8	\$4,593.7	\$169.5	\$4.5	\$174.0
2009	\$4,718.1	\$141.5	\$4,859.6	\$179.3	\$4.7	\$184.0
2010	\$4,989.8	\$147.5	\$5,137.3	\$189.6	\$4.9	\$194.5
2011	\$5,277.2	\$153.8	\$5,431.0	\$200.5	\$5.1	\$205.6
2012	\$5,581.2	\$160.3	\$5,741.5	\$212.1	\$5.3	\$217.4
2013	\$5,902.7	\$167.0	\$6,069.7	\$224.3	\$5.5	\$229.8
2014	\$6,242.7	\$174.1	\$6,416.8	\$237.2	\$5.7	\$243.0
2015	\$6,602.3	\$181.5	\$6,783.7	\$250.9	\$6.0	\$256.9
2016	\$6,982.6	\$189.1	\$7,171.7	\$265.3	\$6.2	\$271.6
2017	\$7,384.7	\$197.1	\$7,581.9	\$280.6	\$6.5	\$287.1
2018	\$7,810.1	\$205.5	\$8,015.6	\$296.8	\$6.8	\$303.6
2019	\$8,260.0	\$214.2	\$8,474.1	\$313.9	\$7.1	\$320.9
2020	\$8,735.7	\$223.2	\$8,959.0	\$332.0	\$7.4	\$339.3
2021	\$9,238.9	\$232.7	\$9,471.6	\$351.1	\$7.7	\$358.8
2022	\$9,771.1	\$242.5	\$10,013.6	\$371.3	\$8.0	\$379.3
2023	\$10,333.9	\$252.8	\$10,586.7	\$392.7	\$8.3	\$401.0
2024	\$10,929.1	\$263.5	\$11,192.6	\$415.3	\$8.7	\$424.0
2025	\$11,558.7	\$274.6	\$11,833.3	\$439.2	\$9.1	\$448.3
2026	\$12,224.4	\$286.2	\$12,510.7	\$464.5	\$9.4	\$474.0
2027	\$12,928.6	\$298.3	\$13,226.9	\$491.3	\$9.8	\$501.1
2028	\$13,673.2	\$311.0	\$13,984.2	\$519.6	\$10.3	\$529.8

Note that by 2028, the yearly tax yield from commercial and industrial property (using the state growth rate assumptions list above) would actually be \$414 million less than using the baseline no-airport scenario.

**5.5 The Modified Ankeny Scenario**

The Service Area could experience a growth pattern similar to what occurred in Ankeny after they opened their regional airport in 1995. Such a comparison is reasonable. Ankeny is located adjacent to metro Des Moines and so is the Service Area. The Ankeny Airport is located on a motor transportation hub, as is the proposed West Metro Regional Airport. The demographics show that both areas are characterized by rapid population growth and rising income levels.

Table 5-9 shows that during the ten years prior to the opening of the Ankeny regional airport, the

value of their commercial property grew at a compounded annual rate of 9.46%. After the opening of the airport, the growth rate increased by 1.45 percentage points. The growth rate for industrial property fell during the post-airport period because of the substantial number of high profile industrial businesses that opened in Ankeny during the 1985-1995 period.

**Table 5-9. Growth in Commercial and Industrial Property Value in Ankeny**

Year	Valuation			Compounded Annual Growth Rate		
	Commercial	Industrial	Total	Commercial	Industrial	Total
1985	\$81,976,450	\$30,083,700	\$112,060,150			
1995	\$202,354,880	\$54,790,980	\$257,145,860	9.46%	6.18%	8.66%
2003	\$463,245,710	\$69,889,800	\$533,135,510	10.91%	3.09%	9.54%

Source: Polk County Assessor

We based our third scenario on a composite that reflects the current Dallas County commercial property growth rate with an incremental 1.45 percentage point bump similar to what was experienced in Ankeny following the opening of their airport in 1995. This scenario proposes a growth rate of 10.34% for commercial property valuation in the Service Area beginning in 2008.

For the scenario, we assumed that after 2008 Service Area industrial property valuation would grow at the same rate as its current growth rate for such property in the Des Moines' westernmost suburbs. The compounded rate of growth for industrial property valuation in Clive, Urbandale and West Des Moines for the period 1995-2003 was 6.59% (see Table 5-5). Table 5-10 shows the projections using those assumptions.

**Table 5-10. Projecting a Modified Ankeny Growth Scenario for the Service Area**

Year	Projected Valuation (Millions)			Projected Tax Receipts (Millions)		
	Commercial	Industrial	Total	Commercial	Industrial	Total
2008	\$4,461.1	\$135.8	\$4,593.7	\$169.5	\$4.5	\$174.0
2009	\$4,922.4	\$144.7	\$5,067.1	\$187.1	\$4.8	\$191.8
2010	\$5,431.4	\$154.3	\$5,585.6	\$206.4	\$5.1	\$211.5
2011	\$5,993.0	\$164.4	\$6,157.4	\$227.7	\$5.4	\$233.2
2012	\$6,612.6	\$175.3	\$6,787.9	\$251.3	\$5.8	\$257.1
2013	\$7,296.4	\$186.8	\$7,483.2	\$277.3	\$6.2	\$283.4
2014	\$8,050.8	\$199.1	\$8,250.0	\$305.9	\$6.6	\$312.5
2015	\$8,883.3	\$212.3	\$9,095.5	\$337.6	\$7.0	\$344.6
2016	\$9,801.8	\$226.2	\$10,028.1	\$372.5	\$7.5	\$379.9
2017	\$10,815.3	\$241.2	\$11,056.5	\$411.0	\$8.0	\$418.9
2018	\$11,933.6	\$257.0	\$12,190.7	\$453.5	\$8.5	\$462.0
2019	\$13,167.6	\$274.0	\$13,441.5	\$500.4	\$9.0	\$509.4
2020	\$14,529.1	\$292.0	\$14,821.1	\$552.1	\$9.6	\$561.7
2021	\$16,031.4	\$311.3	\$16,342.7	\$609.2	\$10.3	\$619.5
2022	\$17,689.0	\$331.8	\$18,020.8	\$672.2	\$10.9	\$683.1
2023	\$19,518.1	\$353.7	\$19,871.8	\$741.7	\$11.7	\$753.4
2024	\$21,536.3	\$377.0	\$21,913.2	\$818.4	\$12.4	\$830.8
2025	\$23,763.1	\$401.8	\$24,164.9	\$903.0	\$13.3	\$916.3
2026	\$26,220.2	\$428.3	\$26,648.5	\$996.4	\$14.1	\$1,010.5
2027	\$28,931.4	\$456.5	\$29,387.9	\$1,099.4	\$15.1	\$1,114.5
2028	\$31,922.9	\$486.6	\$32,409.5	\$1,213.1	\$16.1	\$1,229.1

Note that under this scenario, by 2028, the yearly tax yield from commercial and industrial property (using the assumptions listed above) would be \$285 million more than the baseline no-airport

scenario – a 30% increase.

Table 5-11 shows the economic development growth prospects using the modified Ankeny growth scenario. As demonstrated by the Ankeny experience, the airport and the adjacent business park have been both a major contributor to the economic growth of that region. It is a part of the business-friendly infrastructure of the community. While the growth prospects for the Dallas County and western Polk County region are already strong, a general-use airport in the region would be a substantial asset. Table 5-11 shows the additional business property taxes that the region can reasonably expect to see.

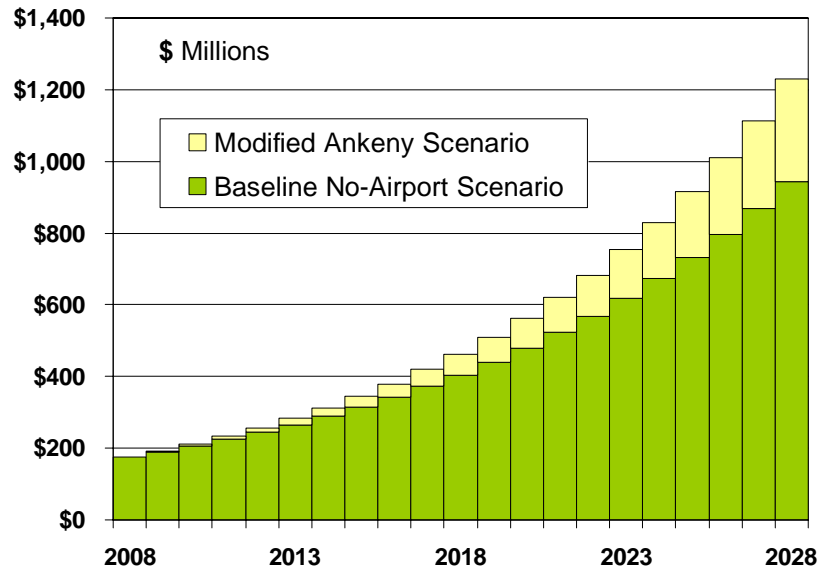
**Table 5-11. Increases Associated with the Modified Ankeny Scenario**

Year	Projected Valuation (Millions)			Projected Tax Receipts (Millions)		
	Commercial	Industrial	Total	Commercial	Industrial	Total
2008	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2009	\$64.7	\$1.5	\$66.2	\$2.5	\$0.1	\$2.5
2010	\$141.8	\$3.3	\$145.1	\$5.4	\$0.1	\$5.5
2011	\$233.2	\$5.2	\$238.4	\$8.9	\$0.2	\$9.0
2012	\$340.8	\$7.4	\$348.2	\$13.0	\$0.2	\$13.2
2013	\$467.0	\$9.8	\$476.8	\$17.7	\$0.3	\$18.1
2014	\$614.3	\$12.4	\$626.7	\$23.3	\$0.4	\$23.8
2015	\$785.6	\$15.4	\$801.0	\$29.9	\$0.5	\$30.4
2016	\$984.3	\$18.6	\$1,002.9	\$37.4	\$0.6	\$38.0
2017	\$1,213.9	\$22.2	\$1,236.2	\$46.1	\$0.7	\$46.9
2018	\$1,478.7	\$26.2	\$1,504.9	\$56.2	\$0.9	\$57.1
2019	\$1,783.2	\$30.6	\$1,813.7	\$67.8	\$1.0	\$68.8
2020	\$2,132.6	\$35.4	\$2,168.0	\$81.0	\$1.2	\$82.2
2021	\$2,532.9	\$40.6	\$2,573.5	\$96.2	\$1.3	\$97.6
2022	\$2,990.5	\$46.4	\$3,036.9	\$113.6	\$1.5	\$115.2
2023	\$3,512.8	\$52.7	\$3,565.5	\$133.5	\$1.7	\$135.2
2024	\$4,108.1	\$59.6	\$4,167.7	\$156.1	\$2.0	\$158.1
2025	\$4,785.6	\$67.1	\$4,852.8	\$181.9	\$2.2	\$184.1
2026	\$5,555.6	\$75.4	\$5,631.0	\$211.1	\$2.5	\$213.6
2027	\$6,429.7	\$84.4	\$6,514.1	\$244.3	\$2.8	\$247.1
2028	\$7,420.8	\$94.2	\$7,515.0	\$282.0	\$3.1	\$285.1

Figure 5-1 illustrates the growth of property taxes that we project the Service Area will receive from now through 2028. If the Service Area communities experience the kind of business growth that followed the opening of the Ankeny airport, they could reasonably expect to see a 30% increase in their business property tax receipts (\$285 million growth by 2028 compared to the baseline projection of \$944 million).

While we cannot attribute all of this benefit to the new airport, it will certainly be a contributing factor.

**Figure 5-1. Business Property Taxes with the Modified Ankeny Scenario**



**5.6 Conclusions**

- Business tax valuations in the Service Area grew at a compounded annual rate of 8.75% during the 1995-2003 period.
- If the Service Area communities experience the kind of business growth that followed the opening of the Ankeny airport, they could reasonably expect to see a 30% increase in their business property tax receipts.

**6. ECONOMIC IMPACT OF THE REGIONAL AIRPORT ON OTHER AIRPORTS**

**6.1 Registered Aircraft**

Growth in the use of General Aviation airports has been associated with a general growth in the population and business of a region. This pattern is apparent nationally, as well as in the Dallas and Polk County area. The Ankeny airport has stimulated and complemented strong growth on the north side of the Des Moines metro region. The Des Moines metro region is also exhibiting strong economic growth in the western suburbs and exurbs.

The number of registered aircraft in the area is one indication of the potential demand for service by area General Aviation airports. The Runway Implementation Plan for the Des Moines International Airport (Runway 13R-31L) that was developed for the City of Des Moines by Coffman Associates in 2001 included a method for projecting the number of registered aircraft in their two-county service area. The analysts developed a regression model using the historical population pattern and the recorded aircraft registrations. They concluded that the ratio of registered aircraft to population was 1.32 per 1,000. With this ratio and a set of population forecasts, they indicated that the number of aircraft in their service area would increase by about 140 from 1999 to 2020. (We have reproduced their work in Table 6-1).

**Table 6-1. Registered Aircraft per 1,000 Population, Polk and Warren County**

Year	Polk and Warren Counties		Registered Aircraft per 1,000 Population
	Registered Aircraft	Population	
1980	498	338,674	1.47
1983	484	340,435	1.42
1986	485	344,613	1.41
1989	468	358,120	1.31
1990	494	364,525	1.36
1991	481	369,205	1.30
1992	491	375,456	1.31
1993	496	380,886	1.30
1994	492	385,023	1.28
1995	514	389,270	1.32
1996	528	392,507	1.35
1997	523	394,014	1.33
1998	526	399,329	1.32
1999	544	405,286	1.34
Forecast			
2005	574	436,240	1.32
2010	609	463,150	1.32
2020	684	519,700	1.32

Source: Runway 12R-31L Implementation Plan, Des Moines International Airport

**6.2 Projecting Area Registered Aircraft**

We used the same methodology to forecast the number of registered aircraft owners who will be living in the West Metro Area Airport Service Area. For the model we projected the numbers to increase by 134 between 2005 and 2025, and 18% of that growth (24 registered aircraft) being located in Dallas County.



**Table 6-2. Registered Aircraft, Forecast for Dallas and Polk Counties**

Year	Population Projections		Registered Aircraft Projections	
	Dallas County	Polk County	Dallas County	Polk County
2005	45,730	395,239	55	522
2010	49,098	414,386	65	547
2015	52,604	434,752	69	574
2020	56,246	455,994	74	602
2025	60,008	478,433	79	632

Source: Population from Woods & Poole Economics, Inc.

Actually, we expect greater growth in new registrations to occur in Dallas County than in Polk County. Current totals from the FAA registration database indicate that the actual Dallas County ratio is about 1.35 registrations per 1,000 population, while the current ratio for Polk County is 1.01 (Table 6-3).

**Table 6-3 Number of Privately Owned Aircraft in the Service Area, 2004**

Type of Ownership	Dallas County	Polk County
Individual	32	179
Partnership	1	9
Corporation	21	152
Co-owner	7	44
Government	0	12
Other	0	0
<b>Total</b>	<b>61</b>	<b>396</b>
2004 Population	45,068	391,453
Registration to Population Ratio	1.3535	1.0116

Source: Population from Woods & Poole Economics, Inc.

While undoubtedly some of the aircraft that will be based at the future West Metro Regional Airport will be drawn from the markets currently being served by the Ankeny and Des Moines airports, much of this growth will be driven by demographics. The expected 33% population growth in Dallas County by 2025 would justify a new regional airport even if no based aircraft were attracted away from existing area airports. In addition, the Polk County population, which forecasters expect to see grow by 22% over this period, should help both the Ankeny and Des Moines airports at least maintain their current markets.

The geographic location of those registered aircraft owners within the Service Area will be one of the factors that will determine which airport they will choose. Tables 6-4 and 6-5 show the community and zip code of the registered owners. We have identified the most likely airport that owners in those zip code areas would use based upon their travel distance.

**Table 6-4. Registered Owners Located in Polk County, 2004**

Registered Owner's Location		Total Registrations	Most Likely Airport to Use			
City	Zip code		Dallas	Uncertain	Des Moines	Ankeny
Altoona	50009	9				9
Ankeny	50021	57				57
Bondurant	50035	1				1
Clive	50325	13		13		
Des Moines	50301	1			1	
Des Moines	50304	1			1	
Des Moines	50305	1			1	
Des Moines	50306	2			2	
Des Moines	50309	32			32	
Des Moines	50310	16			16	
Des Moines	50311	6			6	
Des Moines	50312	19			19	
Des Moines	50313	23			23	
Des Moines	50314	1			1	
Des Moines	50315	27			27	
Des Moines	50317	24			24	
Des Moines	50318	1			1	
Des Moines	50319	8			8	
Des Moines	50320	2			2	
Des Moines	50321	13			13	
Des Moines	50392	2			2	
Elkhart	50073	3			3	
Granger	50109	2		2		
Grimes	50111	6		6		
Johnston	50131	12				12
Mitchellville	50169	2				2
Polk City	50226	7				7
Runnells	50237	15			15	
Urbandale	50322	41		41		
Urbandale	50323	3	3			
West Des Moines	50265	27		27		
West Des Moines	50266	19	19			
<b>Total</b>		<b>396</b>	<b>22</b>	<b>89</b>	<b>197</b>	<b>88</b>

Source: FAA Aircraft Registration Branch, information as of March 30, 2004

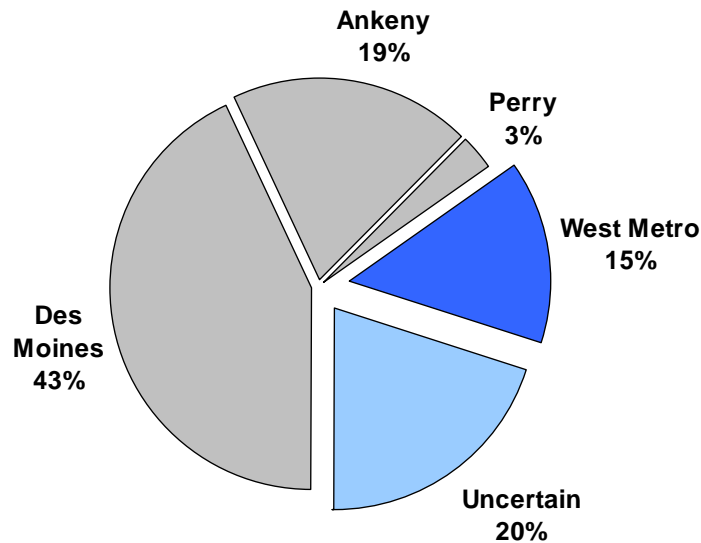
**Table 6-5 Registered Owners Located in Dallas County, 2004**

Registered Owner's Location		Total Registrations	Most Likely Airport to Use			
City	Zip code		Dallas	Uncertain	Des Moines	Perry
Adel	50303	10	10			
Booneville	50038	2		2		
Dallas Center	50063	2	2			
Dawson	50066	1				1
De Soto	50069	5	5			
Dexter	50070	1	1			
Linden	50146	1	1			
Minburn	50167	2	2			
Perry	50220	11				11
Urbandale	50323	2	2			
Waukee	50263	19	19			
West Des Moines	50266	4	4			
Woodward	50276	1				1
<b>Total</b>		<b>61</b>	<b>46</b>	<b>2</b>		<b>13</b>

Source: FAA Aircraft Registration Branch, information as of March 30, 2004

Of the 457 current registered aircraft owners located in Polk and Dallas Counties, we have identified 68 or 15% who would benefit by locating their airplane at the new Regional Airport, based solely on travel distance and time. There are another 91 aircraft owners located midway between the Metro West proposed facility and another existing airport. We expect a portion of those will also consider locating at the new airport. Of course, many other factors affect where owners choose to locate their aircraft. However, the new airport would be attractive to as many as 159 current registered aircraft owners (or 35%) in the two county area. Figure 6-1 shows the distribution by likely location.

**Figure 6-1. Which Airport Will Registered Owners Most Likely Use?**

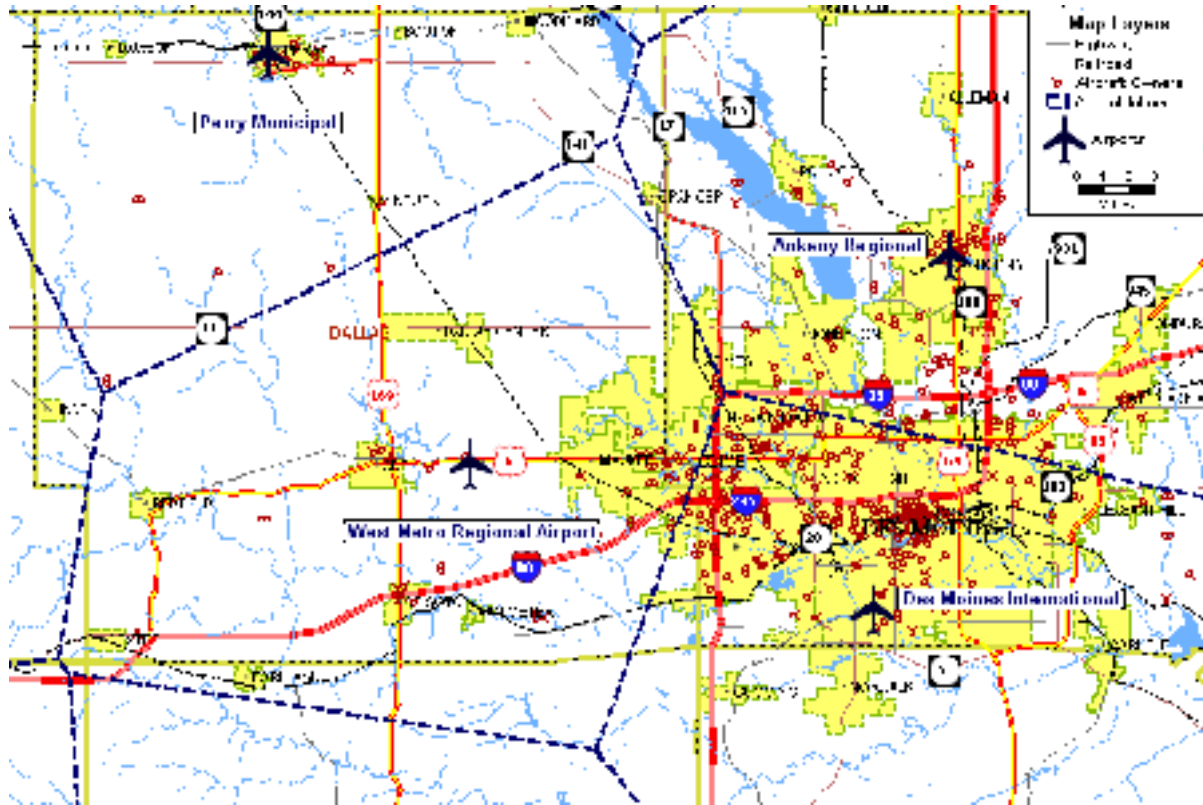


Source: FAA Aircraft Registration Branch, information as of March 30, 2004

Figure 6-2 displays the location of current registered aircraft owners in the Service Area and shows

the potential market for the New Regional Airport.

**Figure 6-2. Location of Aircraft Owners within Dallas and Polk Counties**



Source: FAA Registry, March 30, 2004

The growing trend toward the utilization of private jets is another recent development. The FAA forecast in Table 6-6 shows minimal growth in the purchase and use of piston engine aircraft and a substantial increase in the use of turboprops and turbojets. Increasingly, these aircraft are owned on a fractional basis. According to the FAA, fractional ownership increased nationally by 41.3% since 2000.<sup>1</sup>

**Table 6-6. Projected Annual Growth in General Aviation Activity, 2004-2015**

Aircraft Type	Fleet	Hours Flown
Total	1.2%	1.5%
Single-engine Piston	0.3%	0.6%
Multi-engine Piston	-0.5%	-0.4%
Turboprop	3.5%	0.0%
Turbojet	4.9%	6.0%

Source: FAA FY 2004-2015 Aerospace Forecasts

<sup>1</sup> FAA Aerospace Forecasts, Fiscal Years 2004-2015. Chapter 5, page 12.

The Ankeny and Des Moines airports currently serve this population of business and general use planes. Growth in commercial and cargo activities at the Des Moines airport appears to be affecting accessibility for general use aviation. The number of general use planes based at the Des Moines airport has declined from a peak in 1983 of 264, to 142 in 1994, to 133 in 1997 after the opening of the Ankeny airport . The number of based aircraft at the Des Moines airport this year is estimated to be 127. Ankeny officials reported to us that part of their airport growth has been the result of private planes relocating to avoid the congestion at the Des Moines airport.

The Ankeny airport is currently at full capacity awaiting its next planned expansion. These capacity issues along with anticipated future growth suggest that there is potential for additional airport facilities in the Des Moines metropolitan area without adversely affecting the market of any other airport. Airport development in a rural setting will circumvent many of the land use controversies that occur from expanding airports in an existing residential area. A recent article in the Des Moines Register illustrates this point.<sup>2</sup>

### **6.3 Conclusion**

- There are currently 457 aircraft registered to owners in Dallas and Polk Counties. In about 20 years that number is expected to increase by about half-again.
- We expect 68 of those current aircraft owners (or 15%) to find the Regional Airport geographically more attractive. Another 91 (or 20%) are within a competitive 20-mile market range.

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<sup>2</sup> "Residents Bash Plan to Expand D. M. Airport", Des Moines Register, April 6, 2004

**7. OVERALL ECONOMIC IMPACT ANALYSIS**

In Sections 3 and 4, we identified the impact on the Service Area during the construction and operations stages of development. During the first ten-year period, the economic activity of the airport will generate an increase in sales to area businesses of \$45.3 million, employ the equivalent of 495.7 person-years of work and generate a cumulative payroll of about \$17.9 million.

In Phase 3, the economic activity will create an increase in sales for the 10-year period of about \$34.6 million. The average of 399.3 person-years of work within the Service Area will bring home a cumulative payroll of about \$13.8 million.

**Table 7-1. Summary of the Total Impact of Construction and Operations**

Phases 1 & 2	Total Sales	Labor Income	Value Added	Jobs+
Construction	\$31,336,182	\$12,282,621	\$15,553,591	328.7
Operations	\$13,999,220	\$5,604,520	\$8,212,020	167.0
<b>Total</b>	<b>\$45,335,402</b>	<b>\$17,887,141</b>	<b>\$23,765,611</b>	<b>495.7</b>

Phase 3	Total Sales	Labor Income	Value Added	Jobs
Construction	\$9,124,258	\$3,599,123	\$4,557,601	96.3
Operations	\$25,453,130	\$10,190,050	\$14,930,950	303.0
<b>Total</b>	<b>\$34,577,388</b>	<b>\$13,789,173</b>	<b>\$19,488,551</b>	<b>399.3</b>

Total	Total Sales	Labor Income	Value Added	Jobs
Construction	\$40,460,440	\$15,881,744	\$20,111,192	425.0
Operations	\$39,452,350	\$15,794,570	\$23,142,970	470.0
<b>Total</b>	<b>\$79,912,790</b>	<b>\$31,676,314</b>	<b>\$43,254,162</b>	<b>895.0</b>

**Table 7-2. Summary of the Annual Average Impact of Construction and Operations**

Phases 1 & 2	Total Sales	Labor Income	Value Added	Jobs*
Construction	\$3,133,618	\$1,228,262	\$1,555,359	32.9
Operations	\$1,399,922	\$560,452	\$821,202	16.7
<b>Total</b>	<b>\$4,533,540</b>	<b>\$1,788,714</b>	<b>\$2,376,561</b>	<b>49.6</b>

Phase 3	Total Sales	Labor Income	Value Added	Jobs
Construction	\$912,426	\$359,912	\$455,760	9.6
Operations	\$2,545,313	\$1,019,005	\$1,493,095	30.3
<b>Total</b>	<b>\$3,457,739</b>	<b>\$1,378,917</b>	<b>\$1,948,855</b>	<b>39.9</b>

Total	Total Sales	Labor Income	Value Added	Jobs
Construction	\$2,023,022	\$794,087	\$1,005,560	21.2
Operations	\$1,972,618	\$789,729	\$1,157,149	23.5
<b>Total</b>	<b>\$3,995,640</b>	<b>\$1,583,816</b>	<b>\$2,162,708</b>	<b>44.7</b>

\* Jobs are measured as person-years of employment.

Table 7-2 displays the annual average distribution of the construction and operations benefits assuming that they would be evenly distributed over the individual years within each of the two 10-year periods. The most of the benefits from the construction activity will be concentrated in the first ten years, while most of the cumulative benefits from the operations activity will be concentrated in the last ten.

Over the entire 20-year period, the average wages of the new jobs created will be between \$34,500 and \$36,000 per year (in 2003 dollars).

In Section 5, we examined three scenarios for projecting the taxable value of commercial and industrial property in the county. The most reasonable one appears to be the Modified Ankeny Scenario. Under that scenario during the 2008-2017 period, the Service Area would experience an annual average increase of \$18.7 million in business property taxes for a total increase of \$187.3 million over the ten-year period. Business property valuation in the Area would have increased by a total of \$4.9 billion.

In the second ten-year period, the annual average increase in business property taxes would be \$149.5 million over the baseline no-airport scenario. The total increase for the 2018-2028 period would be \$1.6 billion. Business property valuation in the Area would have increased by a total of \$43.3 billion from 2018-2028. Over the entire twenty-year period, we expect the commercial and industrial property tax valuations to grow by more than \$48.3 billion and tax receipts to grow by more than \$1.8 billion.

**Table 7-3. Average Impact of Development on Business Property Tax Receipts**

Phase	Commercial	Industrial	Total	Commercial	Industrial	Total
	Projected Valuation (Millions)			Projected Tax Receipts (Millions)		
1 & 2	\$7,226.8	\$184.0	\$7,410.5	\$274.6	\$6.1	\$280.7
3	\$20,476.6	\$360.9	\$20,837.5	\$778.1	\$11.9	\$790.0
Phase	Projected Change in Valuation (Millions)			Projected Change in Tax Receipts (Millions)		
1 & 2	\$484.6	\$9.6	\$494.2	\$18.4	\$0.3	\$18.7
3	\$3,884.6	\$55.7	\$3,940.3	\$147.6	\$1.8	\$149.5

**Table 7-4. Total Impact of Development on Business Property Tax Receipts**

Phase	Projected Valuation (Millions)			Projected Tax Receipts (Millions)		
	Commercial	Industrial	Total	Commercial	Industrial	Total
1 & 2	\$72,268.1	\$1,840.1	\$74,105.0	\$2,746.2	\$60.7	\$2,806.9
3	\$225,242.7	\$3,970.0	\$229,212.7	\$8,559.2	\$131.0	\$8,690.2
Total	\$297,510.8	\$5,810.1	\$303,317.7	\$11,305.4	\$191.7	\$11,497.1
Phase	Projected Change in Valuation (Millions)			Projected Change in Tax Receipts (Millions)		
1 & 2	\$4,845.6	\$95.9	\$4,941.5	\$184.1	\$3.2	\$187.3
3	\$42,730.6	\$612.4	\$43,342.9	\$1,623.8	\$20.2	\$1,644.0
Total	\$47,576.2	\$708.3	\$48,284.5	\$1,807.9	\$23.4	\$1,831.3

In addition to the increase in property tax receipts, the communities would also experience a small increase in the local option sales tax because of the increase in commercial activity. Based on the cumulative labor income earnings from the construction and operation stages, adjusted for taxable expenditures, we estimate that the airport will generate \$55,260 in local option sales tax revenues.

## **8. DISTRIBUTION OF THE IMPACTS AMONG THE AUTHORITY MEMBERS**

### **8.1 Distribution of Impacts**

The Feasibility Study, the Master Plan and this report have attempted to identify and quantify the economic benefits associated with a potential airport in Dallas County. The benefits include reduced travel time and costs for businesses and individuals that currently travel farther for their access to a general use airport. Area communities will experience an intangible benefit when they approach business expansion prospects. Future business prospects will require greater access to an air transportation infrastructure.

The benefits also include the direct and secondary employment and income gains that will result from constructing and operating the airport. Lastly, the benefits include the increase in industrial and commercial economic growth and the resulting increase in area business property tax receipts.

A business park as part of the airport authority would help capture these growth benefits directly, but the broader service region would also benefit from expanded airport facilities. The beneficiaries would include the public as well as the plane owners and corporate commuters.

Conceptually a public financing scheme for a public project should attempt to charge the various beneficiaries according to the benefits they receive. Federal funds through the FAA compensate for the benefits to the public and to those engaged in the exchange of interstate commerce. Airplane owners pay for their benefits through licensing and hangar fees. In addition, local taxes represent the cost charged to the public for the benefits of improved airport accessibility, a more attractive business environment and the rewards of economic growth.

The local economic benefits are mainly in the form of new economic growth (jobs, income, vendor sales, increased property values, and an expanded tax base). These local benefits accrue primarily to the local service area.

### **8.2 Allocation Methods**

In this section, we will examine four alternative methods that attempt to project how these benefits are likely to be distributed among the communities and other areas of the county. The four allocation methods include:

1. Population
2. Income-weighted population
3. Taxable business property valuation
4. Taxable business property valuation and proximity

Economists frequently use the first method, predicting the allocation of benefits based on population-based weights. Many federal grant programs use this method for formula fund allocations. However, this method would not necessarily predict the allocation of the benefits according to the most likely airport users or of those with the greatest ability to pay for the services.

The second method, using an income-adjusted population estimate would address what was missing from the first method. This method multiplies the community per capita income times its population to arrive at an estimate of total income. Each community's share of the total area income, would provide a more equitable predictor of how much of the total benefit each community would likely receive. However, income data for communities is only available once every ten years - from the decennial census. While an income-weighted population scheme changes the predicted allocation only slightly, it really does not account for the concentration of assets – especially business assets.



The third method, the taxable valuation plan, would indirectly reflect the wealth and asset values of the region. Both residential and business properties would be included. Currently the preponderance of the developed property, and value, is in the eastern edge of the airport service area. Taxable property values would be the basis of a predictive allocation scheme using this weighting method. An advantage of this predictive allocation method is the ready availability of data. The weighting factors could be updated yearly to automatically incorporate any changes in the relative growth of the property tax base of each community. However, this methodology fails to account for the fact that some communities are somewhat closer to the future airport site than others are.

The fourth method, the proximity and valuation plan, would address this issue. This method involves creating what economists call a gravity model. Such a model accounts for distance from the central site and the attractiveness of the various communities. This model presumes that the closer each community is to the airport site, the greater its access to the benefits. It also presumes that the greater the property valuation of each community (as a surrogate for population, income and assets), the more it will attract the benefits. A smaller community that is close may be equally likely to see a large share of the collective benefits as a larger community that is farther away.

Table 8-1 illustrates the predictive allocation weighting factors for each community in the Authority, comparing each of the four methods.

**Table 8-1. Alternative Allocation Weighting Methodologies**

Community	Method 1		Method 2		Method 3		Method 4		
	Population		Income		Property Valuation		Proximity & Valuation		
	2000 Pop.	Percent of 2000 Pop.	2000 Total Income (Mil.)	Percent of 2000 Total Income	Property Tax Valuation (Mil.)	Percent of Taxable Valuation	Proximity Distance (Miles)	Valuation Divided by Squared Distance	Percent of Proximity-Valuation
Airport Bus. Park	0	0.0%	0.0	0.0%	\$5.0	0.1%	2.0	1.25	1.8%
Adel	3,435	3.0%	67.8	2.0%	\$76.0	1.5%	3.5	6.20	9.0%
Dallas Center	1,595	1.4%	32.0	0.9%	\$48.1	0.9%	5.1	1.85	2.7%
De Soto	1,009	0.9%	17.6	0.5%	\$5.6	0.1%	6.1	0.15	0.2%
Van Meter	866	0.8%	17.6	0.5%	\$15.3	0.3%	5.7	0.47	0.7%
Waukee	5,126	4.5%	124.8	3.6%	\$172.6	3.4%	4.3	9.34	13.5%
Clive	12,855	11.2%	514.9	14.9%	\$702.9	13.9%	8.4	9.96	14.4%
Urbandale	29,072	25.3%	843.7	24.4%	\$1,374.2	27.1%	8.8	17.75	25.7%
W. Des Moines	46,403	40.4%	1,457.3	42.2%	\$1,960.8	38.7%	10.7	17.13	24.8%
Balance of Dallas County*	14,512	12.6%	381.7	11.0%	\$706.9	13.9%	12.0	4.91	7.1%
Service Area	114,873	100.0%	3,457.3	100.0%	\$5,067.3	100.0%		69.00	100.0%

\* Excluding Perry

These weights represent four predictors of which communities gain the most from the location of the new airport, based on current population, income and tax valuation numbers. Of course, these will change over time. For those who feel that the airport usage will be purely population driven, the first method is an appropriate way to distribute the project benefits identified in Section 7.

For instance, if we were to distribute benefits based only on their population share, then we would predict that Clive, Urbandale and West Des Moines would receive about 77% of the benefits, Waukee would receive 4.5% and the other areas would receive the balance.

We assume that as incomes rise and businesses grow, they are more likely to own and use airplanes. Therefore, the second allocation method, which is based on the respective per capita

income levels, would better reflect the benefits received by each community. If we were to use that method, then we would predict that Clive, Urbandale and West Des Moines would receive 81.5% of the benefits and Waukee would receive 3.6%.

In earlier sections of this report, our focus was on the incremental employment and income aspects of the project. In the economic development section, we discussed the growth in property values and property taxes. To the degree that this growth will be capitalized into property values over time, method three will be a more reasonable way to predict the distribution of benefits. If we were to distribute benefits based on the property tax valuation method, then we would be assuming that Clive, Urbandale and West Des Moines would be predicted to receive about 79.7% of the benefits, Waukee predicted to receive 3.4% and the other areas would receive the balance.

The fourth method is the most sophisticated. It accounts for the asset component and considers the importance of proximity. If we were to use this method, then we would predict that Clive, Urbandale and West Des Moines would be predicted to collectively receive 64.9% of the benefits based on their size and Waukee would receive 13.5% because of its proximity.

Tables 8-2, 8-3, 8-4 and 8-5 show how much of the benefits each community would receive, depending upon which of the predictive allocation methods we were to apply.

**Table 8-2. Benefit Predictive Allocation Method 1: Based on Population**

Community	Share	Construction & Operations Stages				C & I Property Tax (Mil.)	
		Total Sales	Labor Income	Value Added	Jobs	Valuations	Receipts
Airport Bus. Park	0.0%	\$0	\$0	\$0	0.0	\$0	\$0.0
Adel	3.0%	\$2,389,599	\$947,204	\$1,293,411	26.8	\$1,444	\$54.8
Dallas Center	1.4%	\$1,109,581	\$439,822	\$600,580	12.4	\$670	\$25.4
De Soto	0.9%	\$701,923	\$278,232	\$379,928	7.9	\$424	\$16.1
Van Meter	0.8%	\$602,443	\$238,800	\$326,083	6.7	\$364	\$13.8
Waukee	4.5%	\$3,565,964	\$1,413,498	\$1,930,139	39.9	\$2,155	\$81.7
Clive	11.2%	\$8,942,736	\$3,544,776	\$4,840,409	100.2	\$5,403	\$204.9
Urbandale	25.3%	\$20,224,288	\$8,016,625	\$10,946,741	226.5	\$12,220	\$463.5
W. Des Moines	40.4%	\$32,280,808	\$12,795,661	\$17,472,538	361.5	\$19,505	\$739.8
Bal. of Dallas Co.	12.6%	\$10,095,448	\$4,001,695	\$5,464,334	113.1	\$6,100	\$231.3
Service Area	100.0%	\$79,912,790	\$31,676,314	\$43,254,162	895.0	\$48,285	\$1,831.3

**Table 8-3. Benefit Predictive Allocation Method 2: Based on Income**

Community	Share	Construction & Operations Stages				C & I Property Tax (Mil.)	
		Total Sales	Labor Income	Value Added	Jobs	Valuations	Receipts
Airport Bus. Park	0.0%	\$0	\$0	\$0	0.0	\$0	\$0.0
Adel	2.0%	\$1,567,524	\$621,344	\$848,449	17.6	\$947	\$35.9
Dallas Center	0.9%	\$738,773	\$292,839	\$399,873	8.3	\$446	\$16.9
De Soto	0.5%	\$407,295	\$161,446	\$220,455	4.6	\$246	\$9.3
Van Meter	0.5%	\$405,778	\$160,845	\$219,634	4.5	\$245	\$9.3
Waukee	3.6%	\$2,885,158	\$1,143,636	\$1,561,641	32.3	\$1,743	\$66.1
Clive	14.9%	\$11,900,942	\$4,717,367	\$6,441,588	133.3	\$7,191	\$272.7
Urbandale	24.4%	\$19,501,207	\$7,730,006	\$10,555,361	218.4	\$11,783	\$446.9
W. Des Moines	42.2%	\$33,683,643	\$13,351,726	\$18,231,847	377.2	\$20,352	\$771.9
Bal. of Dallas Co.	11.0%	\$8,822,471	\$3,497,104	\$4,775,313	98.8	\$5,331	\$202.2
Service Area	100.0%	\$79,912,790	\$31,676,314	\$43,254,162	895.0	\$48,285	\$1,831.3

**Table 8-4. Benefit Predictive Allocation Method 3: Based on Property Value**

Community	Share	Construction & Operations Stages				C & I Property Tax (Mil.)	
		Total Sales	Labor Income	Value Added	Jobs	Valuations	Receipts
Airport Bus. Park	0.1%	\$78,852	\$31,256	\$42,680	0.9	\$48	\$1.8
Adel	1.5%	\$1,198,379	\$475,021	\$648,643	13.4	\$724	\$27.5
Dallas Center	0.9%	\$758,175	\$300,530	\$410,375	8.5	\$458	\$17.4
De Soto	0.1%	\$87,708	\$34,766	\$47,474	1.0	\$53	\$2.0
Van Meter	0.3%	\$240,869	\$95,477	\$130,374	2.7	\$146	\$5.5
Waukee	3.4%	\$2,722,546	\$1,079,179	\$1,473,624	30.5	\$1,645	\$62.4
Clive	13.9%	\$11,084,987	\$4,393,934	\$5,999,938	124.1	\$6,698	\$254.0
Urbandale	27.1%	\$21,671,631	\$8,590,332	\$11,730,140	242.7	\$13,094	\$496.6
W. Des Moines	38.7%	\$30,922,051	\$12,257,069	\$16,737,088	346.3	\$18,684	\$708.6
Bal. of Dallas Co.	13.9%	\$11,147,593	\$4,418,750	\$6,033,825	124.8	\$6,736	\$255.5
Service Area	100.0%	\$79,912,790	\$31,676,314	\$43,254,162	895.0	\$48,285	\$1,831.3

**Table 8-5. Predictive Benefit Allocation Method 4: Based on Property Value & Proximity**

Community	Share	Construction & Operations Stages				C & I Property Tax (Mil.)	
		Total Sales	Labor Income	Value Added	Jobs	Valuations	Receipts
Airport Bus. Park	1.8%	\$1,447,697	\$573,847	\$783,591	16.2	\$875	\$33.2
Adel	9.0%	\$7,184,295	\$2,847,754	\$3,888,622	80.5	\$4,341	\$164.6
Dallas Center	2.7%	\$2,140,696	\$848,542	\$1,158,688	24.0	\$1,293	\$49.1
De Soto	0.2%	\$173,104	\$68,616	\$93,696	1.9	\$105	\$4.0
Van Meter	0.7%	\$544,448	\$215,812	\$294,692	6.1	\$329	\$12.5
Waukee	13.5%	\$10,813,449	\$4,286,300	\$5,852,964	121.1	\$6,534	\$247.8
Clive	14.4%	\$11,537,257	\$4,573,208	\$6,244,737	129.2	\$6,971	\$264.4
Urbandale	25.7%	\$20,551,911	\$8,146,490	\$11,124,073	230.2	\$12,418	\$471.0
W. Des Moines	24.8%	\$19,834,749	\$7,862,217	\$10,735,896	222.1	\$11,984	\$454.5
Bal. of Dallas Co.	7.1%	\$5,685,185	\$2,253,528	\$3,077,203	63.7	\$3,435	\$130.3
Service Area	100.0%	\$79,912,790	\$31,676,314	\$43,254,162	895.0	\$48,285	\$1,831.3

We favor the fourth method. It best takes into account where the vendors are located and the most likely domicile of the employees *today*. That last word is important. As the development of Des Moines' western suburbs and exurbs continue to move deeper into Dallas County, that picture will certainly change.

### **8.3 Conclusions**

- The economic benefits of a new airport include reducing travel time for businesses and individual air service users, growth in jobs, income, vendor sales, property values, and an expanded tax base.
- Our analysis indicates that during the 2008-2028 period the Service Area communities will share an increase in vendor sales of nearly \$80 million, nearly \$32 million in new payrolls, new jobs equivalent to 895 person-years and new business property taxes of \$1.8 billion.
- We presented four methods for predicting how much of these benefits each community would likely receive based on its location relative to the airport and based on today's population and asset distribution.

## **APPENDIX A: STUDY METHODOLOGY**

The methodology utilized to determine the economic impact of the Regional Airport is consistent with the Federal Aviation Administration's manual *Estimating the Regional Economic Significance of Airports, September 1992*.

This study evaluates the following factors for economic impacts:

- Constructing the Regional Airport;
- Operating the Regional Airport;
- Impact on other airports in adjoining service areas; and
- Induced economic development that would result from the Regional Airport.

We estimated these economic impacts in three categories using Input-Output Modeling:

- Direct Impacts;
- Indirect Impacts; and
- Induced Impacts.

### **Input-Output Modeling**

The analysis examines the impact of the Regional Airport using the latest version of the IMPLAN Model developed by the Minnesota IMPLAN Group (MIG). An Input-Output (I-O) model is a general accounting system for an economy. The I-O accounting system describes commodity flows from producers to intermediate and final consumers. This accounting system shows that total industry purchases of commodities, services, employment compensation, value added, and imports are equal to the value of the commodities produced.

Industries produce goods and services for final demand – in this case, general aviation airport services. In doing so, the airport developers purchase goods and services from other producers. These other producers in turn purchase goods and services. This buying of goods and services (indirect purchases) continue until leakages from the region (imports of raw materials and labor) stop the cycle.

The basics of I-O modeling are straightforward. After we determine the region we wish to study, we construct a model from the IMPLAN data banks for the appropriate unit. In the state of Iowa, the current set of I-O accounts allows us to differentiate among 420 industrial sectors along with seven household income levels. When we introduce a set of industrial values into the model that 'shocks' the system, then all of the other industries in the model adjust to the change. Such a shock might be a change in industrial production or a change in demand for a specific kind of commodity, or a change in household income. The I-O model accounts for these adjustments and summarizes them into tables. The kinds of information that we derive from the model are measures such as:

- **Industrial Output.** This is usually the gross sales of a firm for a year or, in the case of a public sector activity, the total expenditure of the entity. It is a measure that society places on the productivity or services of the entities that we are studying. This study uses airport construction or operations expenditures for 2008-2028.
- **Labor income.** The model further divided labor income into earnings and salaries of workers and normal returns to proprietors.
- **Value Added.** Value added usually includes labor income, but it also includes earnings by investors along with indirect tax payments to governments, primarily as use, sales, and excise taxes.

- **Jobs.** For our industries, we measured the number of person-years of labor, not the number of fully employed persons. A person-year of labor is a job equivalent of one person working for one year. In manufacturing, we know that nearly all of the jobs are full-time, full-year. In other sectors, like retail trade and recreation and tourism, many jobs are part-time or seasonal.

The tables differentiate the economic activity further into the:

- **Direct values.** These are the amounts that are directly associated with the industry we are studying or measuring, in this case the Regional Airport.
- **Indirect values.** The direct firm requires these amounts for the inputs. These could be raw commodities, manufactured goods, utilities, transportation, and other businesses or professional services.
- **Induced values.** These economic outcomes result when workers in the direct industry and the demand-driven supplying industries (the indirect values) spend their paychecks in the region. The I-O model calls these values household values or household effects.
- **Total values.** These are the sum of the direct, indirect, and induced values. They give us a cumulative accounting of transactions in the region that are attributable to the direct activity that we first measured.

When we have compiled these economic outcomes, we can then calculate the Social Accounting Matrix (SAM II) economic multipliers that are appropriate for the economic activity that we are measuring. For our purposes, we are compiling a total multiplier. This value is simply the total value divided by the direct value in any of the categories that we are reporting. It gives us the ratio of total economic activity to the direct activity that we are measuring. It tells us how much the entire regional economy reacted per one unit change in the direct measure (a dollar of output, a dollar of labor income paid, a job, etc.).

The study team further refined the output-labor component of the IMPLAN model to reflect the actual purchasing patterns of the airport operations in Iowa.

### **Gravity Modeling**

The predictive allocation analysis examines the impact of the Regional Airport using the Huff Probability Gravity Model. This model was developed by David Huff in 1964 to explain spatial behavior in retail trade. The Huff retail gravity model is a statistical model that establishes the probability of a customer traveling to any given store. It contains two major functions: store attraction and distance decay. Store attraction is generally measured by size or mass. In addition, distance decay is an indicator of how far a customer must travel to reach that store.

In our modeling, valuation-adjusted population of a community is the surrogate for the customers and the airport location is the surrogate for the store.

**APPENDIX B: RESOURCE CONTACTS**

The following individuals provided valuable technical assistance in the preparation of this report:

Mike Albers	Budget and Finance Team, State of Iowa, Dept. of Management
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## **APPENDIX C: THE STUDY TEAM**

### **Harvey Siegelman**

Harvey Siegelman is senior economist and president of Strategic Economics Group, an economic consulting and research firm, which he established in 2001 after retiring as Iowa's longest-serving State Economist.



He held the position for 20 years, serving three governors. Since leaving that position, he has continued to serve as an advisor to state government as well as to several federal governmental agencies. He has served on the state's Economic Forecasting Council and is currently a member of the Grow Iowa Value Review Commission. For more than 20 years, he has also been an adjunct professor of economics at Drake University in Des Moines.

Before being appointed State Economist in 1982, he held several other positions in state government. In an earlier life, he spent eight years as an economics professor and five years as a consulting economist. During that period, he was an economic advisor to the Finance Ministry of Israel. He has been quoted in every major Midwest and many national newspapers and news magazines.

### **Daniel M. Otto**

Daniel Otto was born and raised on a farm near the community of Lester Prairie, Minnesota. He received his Bachelor's and Master's degrees in Agricultural Economics from the University of Minnesota and his Ph.D. in Agricultural Economics from Virginia Tech in Blacksburg, Virginia.



Dr. Otto has been on the Iowa State University faculty since 1981 where he is currently a Professor of Economics and Extension Specialist. During that time, he has worked extensively with community and state officials on regional policy analysis, economic and fiscal impact analysis, and conducting research on a range of economic development and regional policy issues. He has numerous publications in the area of evaluating economic development strategies, local labor market analysis, and local government performance. He was a visiting Professor at the University of Minnesota in the Agricultural Economics Department and interim director of the Regional Issues forum at the Humphrey Institute during 1990/91. He has served on the Economic Forecasting Council and is currently involved in evaluating state and local economic development strategies.