
**Analysis of Aircraft
and Related Parts Industries**

DCG CORPLAN CONSULTING

**Analysis of Aircraft and
Related Parts Industries**

prepared for the

**Baldwin County Economic
Development Alliance**

22070 Highway 59, Ste. 301
Robertsdale, AL 36567

DCG Corplan Consulting LLC

Hutton Park Executive Center
Nineteen Hutton Avenue
West Orange, NJ 07052

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Baldwin County EDA

EXECUTIVE SUMMARY

Key Findings

This study reviews potentials for Baldwin County EDA to recruit selected target industries related to the production of aircraft, aircraft engines and parts, other aircraft parts and auxiliary equipment, and fluid power valve and hose fittings. Our key findings are as follows:

- A 2% compound annual rate of growth for shipments of these industries is projected from 2002 through 2007.
- For this five-year period, employment is projected to increase about 10% (after adjustment for anticipated improvements in productivity).
- Employment in the average establishment varies substantially among these industries:

Fluid valves	87
Aircraft	997
Engines and parts	224
Other parts and equipment:	112

- On an industry-wide basis, profitability on core operations is uniformly rather high, ranging from 8.0% to 10.9%.
- Present areas of concentration (i.e., 5% or over) are scattered among state from coast to coast in all four industries

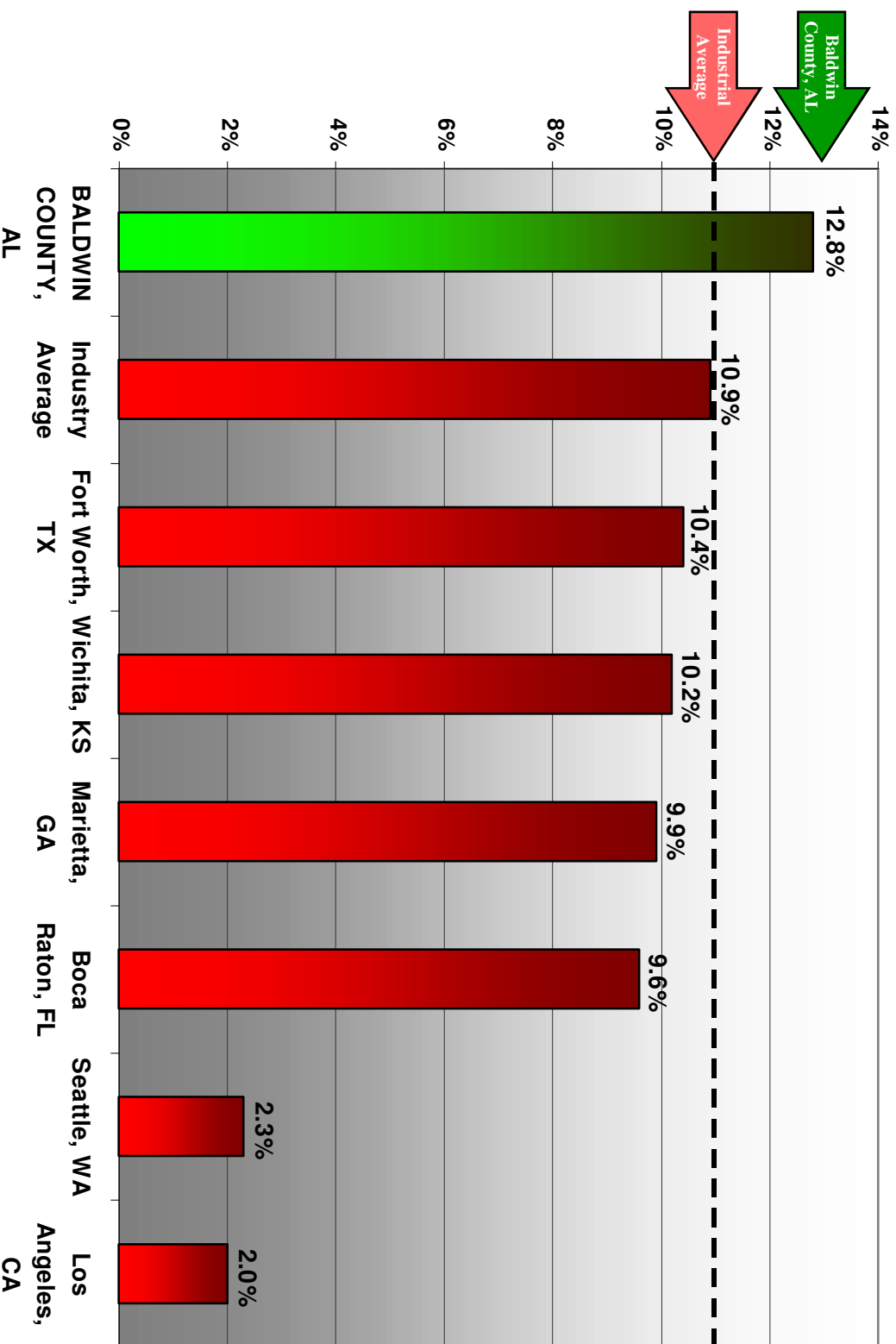
Comparative Operating Costs

Operating costs were computed as percent of net sales for each industry and are shown in income statement forma. Our detailed tabulations compare the industry average with a facility at Baldwin County, the Florida east coast (Palm County), and the present concentrations of the industry.

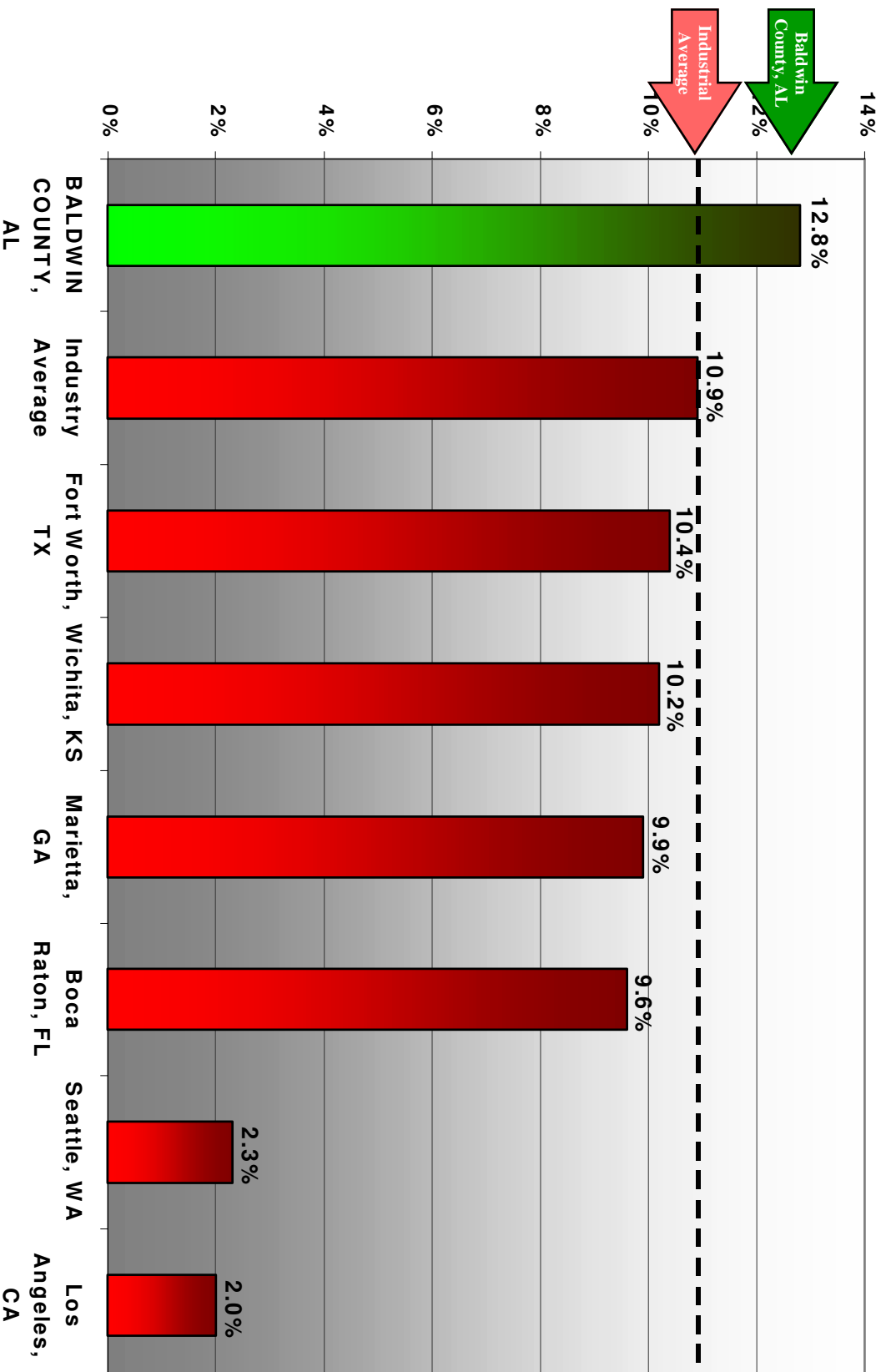
The bottom-line comparisons of operating profits invariably show Baldwin County offers lower costs than the national average for the industry. Baldwin County always is more attractive than any the industry’s present concentrations.

Eastern Florida is always slightly more expensive and represents a marketing opportunity, along with the present concentrations of these industries.

Comparative Operating Profit for
Aircraft Manufacturing (NAICS 336411)

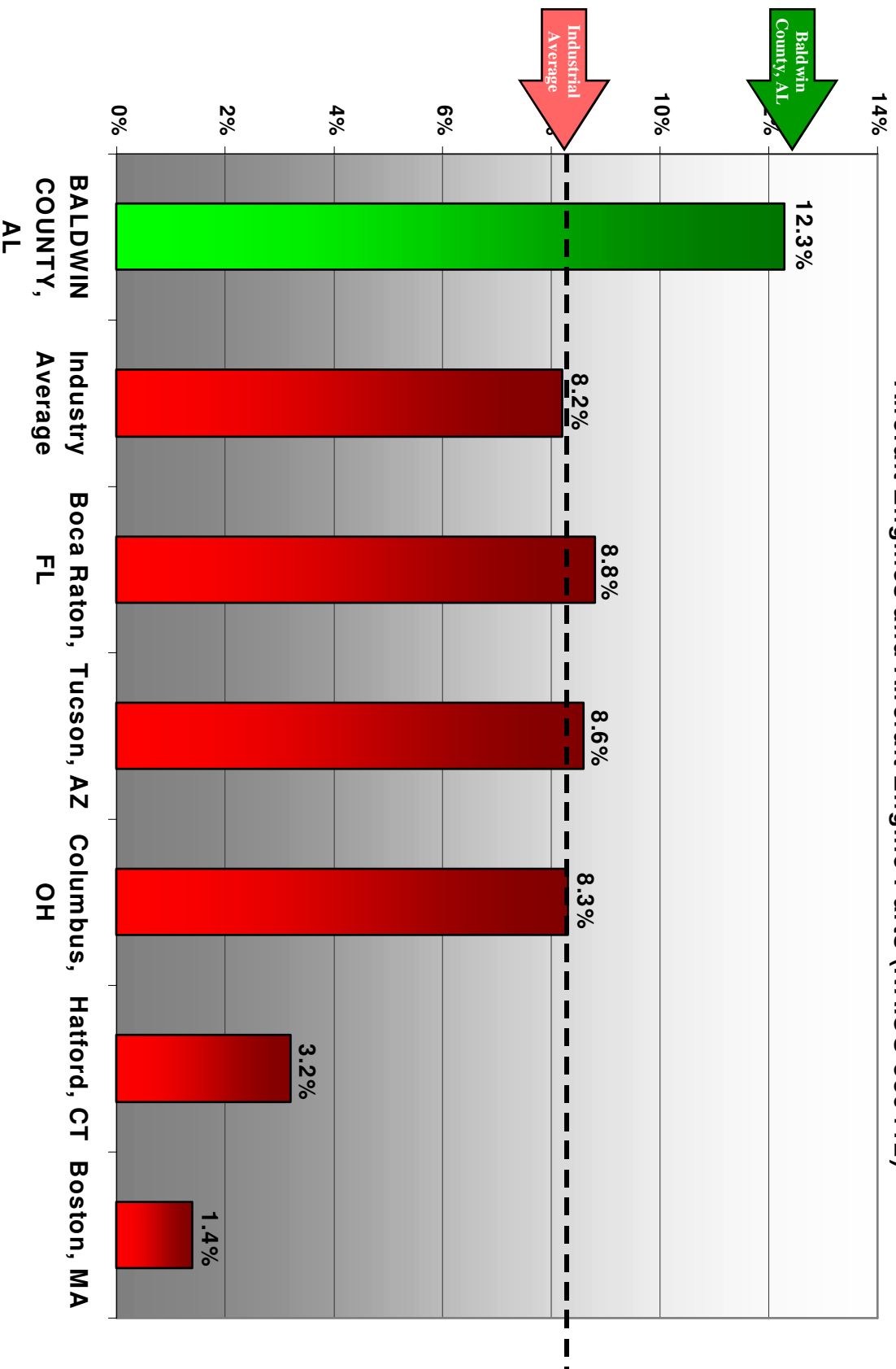


Comparative Operating Profit for
Aircraft Manufacturing (NAICS 336411)



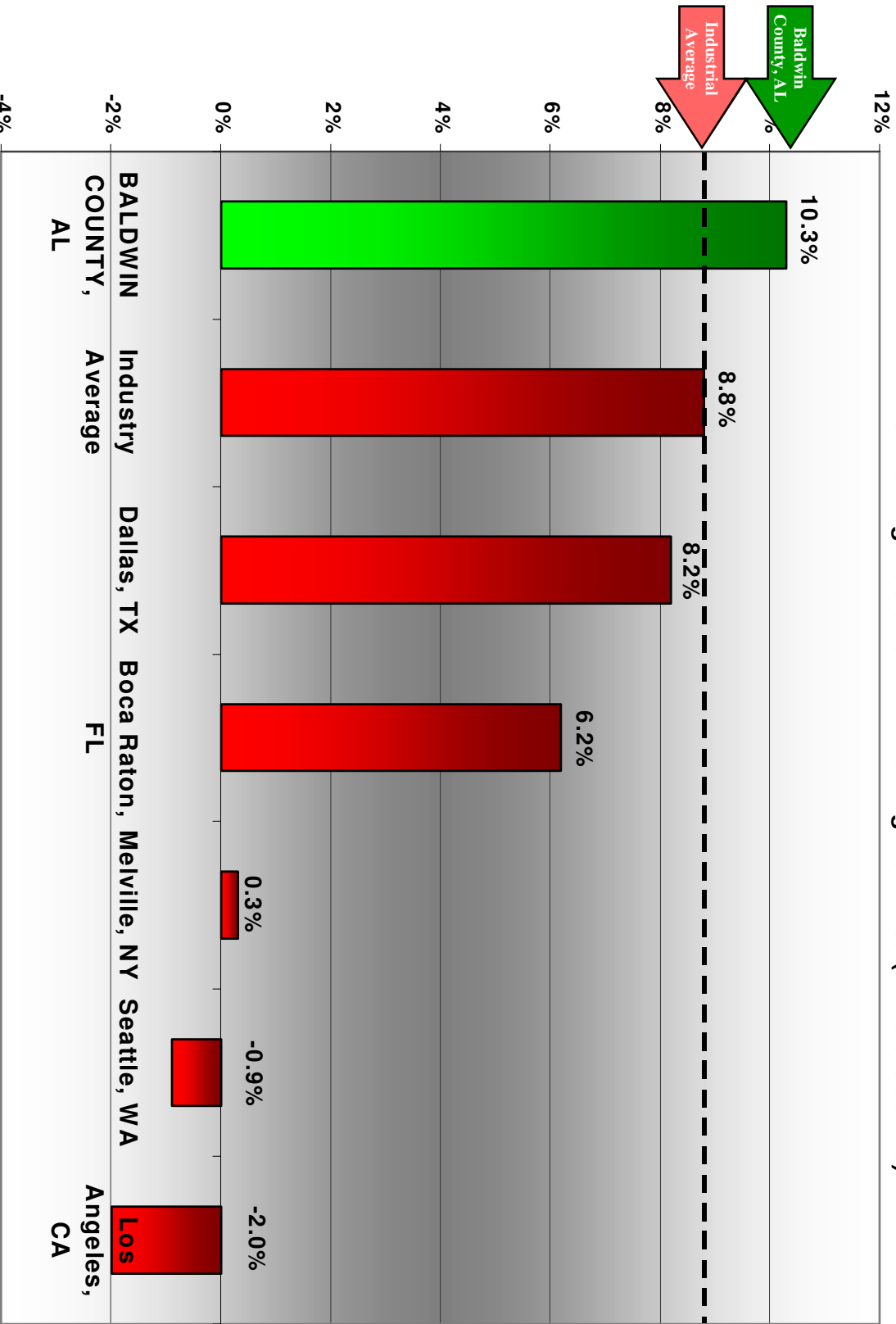
Source: DCG Corplan Consulting LLC, Analysis
Of Aircraft and Related Parts

Comparative Operating Profit for
Aircraft Engines and Aircraft Engine Parts (NAICS 336412)



Source: DCG Corplan Consulting LLC, Analysis
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Comparative Operating Profit for
Aircraft Engines and Aircraft Engine Parts (NAICS 336413)



Source: DCG Corplan Consulting LLC, Analysis
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Background and Objectives

In our previous assignment, we had suggested that NAICS 336413 (Other Aircraft Parts and Auxiliary Equipment) represented a good “fit” for Baldwin County, and our initial marketing model was based upon that industry. As we contacted parts manufacturers; however, we found that some of your best prospects may be participating in industries previously classified under SIC 3492 (Fluid Power Valves and Hose Fittings), SIC 3721 (Aircraft), SIC 3724 (Aircraft Engines and Engine Parts), or portions of SIC 3728 (Aircraft Parts and Auxiliary Equipment). It is recommended, therefore, that your target should be expanded to include the following NAICS industry codes and product lines:

NAICS code	Industry	Product lines
332912	Fluid Power Valve and Hose Fitting Manufacturing	Aerospace hydraulic fluid power valves and subassemblies
336411	Aircraft Manufacturing	Modifications. and overhaul; target drones
336412	Aircraft Engine and Engine Parts Manufacturing	Propulsion systems overhaul and rebuilding
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	Crop-dusting equipment, armament racks, in-flight refueling systems, external fuel tanks

Decision makers in these industries may opt for expansion at traditional locations unless they are presented with documentary evidence on better alternatives. Accordingly, the accompanying report provides direct comparisons of operating costs in Baldwin County versus present concentrations that account for 5% or more of industry shipments. Following are excerpts from the study that focus on Aircraft Parts and Auxiliary Equipment Manufacturing.

NAICS 336412 (Other Aircraft. Parts & Auxiliary Equipment Manufacturing)

This U.S. industry comprises establishments primarily engaged in:

- (1) manufacturing aircraft engines and parts;
- (2) developing and making prototypes of aircraft engines and engine parts;
- (3) aircraft propulsion system conversion; and
- (4) aircraft propulsion system overhaul and rebuilding.

The re-defined, the industry replaces parts of the previous SIC 3724 (Aircraft Engines and Engine Parts).

Sales Trends and Projections

As reported in the Annual Survey of, Manufactures (U.S. Census Bureau), mixed trends in value of shipments have been experienced in these industries since 1997. Estimates for the period 2000-2002 reflect the recession and the impact of 9-11. Uncertainties about restoration of commercial passenger traffic volume and the levels of military demand under new weapons programs cloud the outlook beyond 2002, and a 2% compounded annual rate of growth is now anticipated.

Table 1. Value of shipments (\$ billions)

Year	NAICS 336412
1997	22.9
1998	24.9
1999	24.3
2000	25.2
2001	26.0
2002	26.0
2003	26.5
2004	27.1
2005	27.6
2006	28.1
2007	28.7

Employment Trends and Projections

In parallel with shipment data, employment in these industries shows a mixed trend for 1997-2000. Estimates for subsequent years utilize the 2000 output levels per employee, adjusted for a 2.9% annual improvement in productivity.

Table 2. Estimated employment (in 000's)

Year	NAICS 336412
Output per employee in 2000	\$307,300
1997	84.4
1998	84.6
1999	85.1
2000	82.0
2001	82.2
2002	82.2
2003	83.8
2004	85.7
2005	87.2
2006	88.8
2007	90.7

Derived from the 1997 Census of Business, the following statistics provide a profile of the average establishment in each of these industries:

Table 3. Model of average establishment

	NAICS 336412
Annual shipments (\$ mil)	61.3
Total employment	224
Production workers	130
Total payroll (\$ mil)	11.4
Wages (\$ mil)	5.2
Average hourly earnings (\$)	19.60
Cost of materials (\$ mil)	30.7
Annual capital investment (\$ mil)	1.8

Performance Standards for Core Operations

The following ratios prevail for core operations at the indicated annual sales volume for an average-sized establishment. (Excluded are adjustments for other income and expenses, such as interest expense; miscellaneous expenses not included in general and administrative expenses, as netted against recoveries, interest income, dividends received, and miscellaneous income.)

Table 4. Income data for typical establishment

	NAICS 336412
Net sales	100.0
Cost of goods sold	77.4
Gross profit	22.6
Operating expenses	14.4
Operating profit	8.2

The accompanying computations provide estimates of income accounts and profitability for these industries in Baldwin County, for competitive sectors of Florida, and for states that account for 5% or more of shipments in the industry.

Table 5. Concentrations of industry and key operating cost factors

336412	Aircraft engine	Columbus, OH	20.0
		Hartford, CT	18.2
		Wellington, FL	10.6
		Tucson, AZ	9.4
		Boston, MA	8.2

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Comparative operating costs and profitability for NAICS 332912 - Fluid Power Valve and Hose Fitting Manufacturing									
	Industry average	Baldwin County Alabama	Boca Raton Florida	Toledo Ohio	Muskegon MI	Los Angeles California	Milwaukee Wisconsin		
NET SALES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less:									
Materials used	40.4	44.4	44.4	40.4	40.4	48.5	40.4	40.4	
Direct labor	11.5	10.1	11.3	11.4	12.0	12.9	12.0	12.0	
Gross rent	2.5	2.3	2.2	2.7	2.5	2.8	2.7	2.7	
Fuels and electric	1.0	0.9	1.1	1.2	1.2	1.2	1.2	0.9	
Other allocated expense	17.6	15.5	17.2	17.4	18.3	19.7	18.3	18.3	
Other manufacturing expense	21.1	18.7	20.5	21.3	21.9	23.7	23.7	22.0	
Depreciation	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	
	73.4	69.9	71.1	67.2	67.8	76.8	67.8	67.8	
GROSS PROFIT	26.6	30.1	28.9	32.8	32.2	23.2	32.2	32.2	
Less:									
Sales expense	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
General and administrative expense	12.8	11.3	12.5	12.7	13.3	14.3	13.3	13.3	
OPERATING EXPENSE	17.8	16.3	17.5	17.7	18.3	19.3	18.3	18.3	
OPERATING PROFIT	8.8	13.8	11.4	15.1	13.9	3.9	13.9	13.9	

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Com parative operating costs and profitability for NAICS 336411 (Aircraft Manufacturing)									
	Industry average	Baldwin County Alabama	Boca Raton Florida	Seattle Washington	Los Angeles California	Fort Worth Texas	Wichita Kabsas		
PERCENT OF NET SALES									
NET SALES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less :									
Materials used	50.0	52.0	52.0	55.0	55.0	52.0	52.0	52.0	52.0
Direct labor	7.8	6.9	7.6	8.7	8.7	7.4	7.4	7.4	7.5
Gross rent	2.2	2.0	1.9	2.6	2.4	2.0	2.0	2.0	2.0
Fuels and electric	0.4	0.3	0.4	0.7	0.5	0.4	0.4	0.4	0.4
Other allocated expense	9.6	8.4	9.4	10.7	10.8	9.1	9.1	9.1	9.2
Other manufacturing expense	12.2	10.7	12.0	13.5	13.7	11.6	11.6	11.6	11.7
Depreciation	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	71.4	71.0	73.0	78.6	78.8	72.4	72.4	72.4	72.6
GROSS PROFIT	28.6	29.0	27.0	21.4	21.2	27.6	27.6	27.6	27.4
Less :									
Sales expense	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
General and adm inistrative expense	12.7	11.2	12.4	14.1	14.2	12.2	12.2	12.2	12.2
OPERATING EXPENSE	17.7	16.2	17.4	19.1	19.2	17.2	17.2	17.2	17.2
OPERATING PROFIT	10.9	12.8	9.6	2.3	2.0	10.4	10.4	10.4	10.2

**Comparative operating costs and profitability for NAICS 336412
(Aircraft Engines and Engine Parts Manufacturing)**

	Industry average	Baldwin County Alabama	Boca Raton Florida	Columbus Ohio	Hartford Connecticut	West Palm Beach Florida	Tucson Arizona	Boston Massachusetts
NET SALES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less:								
Materials used	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Direct labor	10.1	8.9	9.9	10.0	10.9	9.9	9.2	11.1
Gross rent	1.6	1.5	1.4	1.6	1.8	1.4	1.5	1.9
Fuels and electric	3.8	3.3	4.0	4.0	6.1	4.0	6.0	7.4
Other allocated expense	8.9	7.8	8.7	8.8	9.7	8.7	8.1	9.8
Other manufacturing expense	14.3	12.6	14.1	14.4	17.6	14.1	15.6	19.2
Depreciation	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
COST OF GOODS SOLD	77.4	74.5	77.0	77.4	81.5	77.0	77.8	83.3
GROSS PROFIT	22.6	25.5	23.0	22.6	18.5	23.0	22.2	16.7
Less:								
Sales expense	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
General and administrative expense	9.4	8.3	9.2	9.3	10.2	9.2	8.6	10.3
OPERATING EXPENSE	14.4	13.3	14.2	14.3	15.2	14.2	13.6	15.3
OPERATING PROFIT	8.2	12.3	8.8	8.3	3.2	8.8	8.6	1.4

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Comparative operating costs and profitability for NAICS 336413 (Other Aircraft Parts and Auxiliary Equipment Manufacture									
	Industry average	Baldwin County Alabama	Boca Raton Florida	Seattle Washington	Los Angeles California	Melville New York			
PERCENT OF NET SALES									
NET SALES	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less :									
Materials used	37.2	40.9	40.9	42.6	42.6	37.2			
Direct labor	15.1	13.3	14.8	15.3	16.9	17.1			
Gross rent	2.9	2.7	2.5	3.4	3.2	4.0			
Fuels and electric	1.4	1.2	1.5	2.3	1.7	3.5			
Other allocated expense	12.1	10.6	11.9	13.4	13.6	13.7			
Other manufacturing expense	16.4	14.5	15.9	19.1	18.5	21.2			
Depreciation	4.7	4.7	4.7	4.7	4.7	4.7			
COST OF GOODS SOLD	73.4	73.4	76.3	81.6	82.7	80.2			
GROSS PROFIT	26.6	26.6	23.7	18.4	17.3	19.8			
Less :									
Sales expense	5.0	5.0	5.0	5.0	5.0	5.0			
General and administrative expense	12.8	11.3	12.5	14.2	14.3	14.5			
OPERATING EXPENSE	17.8	16.3	17.5	19.2	19.3	19.5			
OPERATING PROFIT	8.8	10.3	6.2	-0.9	-2.0	0.3			