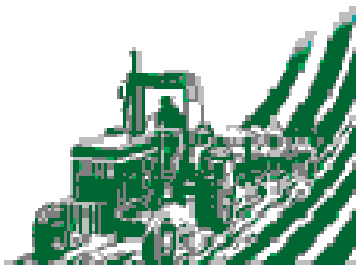

**THE CONTRIBUTION OF
AGRIBUSINESS TO
POLK COUNTY, FLORIDA**

SUPPLEMENT 1

Description of Calculations



January 2006

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AGRIBUSINESS TO
POLK COUNTY, FLORIDA**

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Description of Calculations

Prepared for
Polk County Farm Bureau

Prepared by
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SUPPLEMENT 1

DESCRIPTION OF CALCULATIONS

PART 1: ECONOMIC OUTPUT BY INDUSTRY

OBJECTIVE: The first goal of this study was to determine the economic importance of Polk County's various industries. This section describes the total economic output for the county and the output by each industry, with the *Food & Fiber* industry broken down even further into its component parts. ("Total economic output" is defined as the gross market value of all goods and services).

METHODOLOGY: Although output is calculated at the state and federal levels, (Gross National Product or GNP, and Gross State Product, or GSP) it is not calculated at the county level. Therefore, data on output (sales value), was gathered at a highly detailed level by each type of business and then combined into the industry totals. This detail was provided by the Polk County Property Appraiser, through a list that shows the taxable value of all businesses in the county.¹ This list groups businesses by their North American Industry Classification System (NAICS) number. The list shows how many accounts are represented under each NAICS number, then gives the total taxable value of these businesses, according to their NAICS number. Since state data on employment and federal census data on output also are reported by NAICS number, the Property Appraiser list made it possible to tie state and federal data directly to each of the 619 NAICS business categories (and 25,074 accounts) in the county.

Most of the output data is from the U.S. Census Bureau's Economic Census Series, since that is the only source that provides sales data. County-level data for Florida from the 2002 Economic Census was just being released as data for this study was being gathered in June 2005. The final volumes of the 18-volume Economic Census for Florida were released in September 2005. Most employment and payroll data is from the Florida Department of Labor's ES 202 report (for more detail, see pages A-2 through A-5 in the Appendix).

The county's 619 NAICS business categories were grouped together into the following industry sectors for this study:

<i>Food & Fiber</i>	<i>Non-Agricultural Manufacturing</i>
<i>Mining Industries</i>	<i>Non-Agricultural Wholesale</i>
<i>Construction</i>	<i>Non-Agricultural Retail</i>
<i>Other Industries</i>	<i>Services</i>

The agricultural industry is included in a category called the *Food & Fiber* sector. Restaurants, supermarkets, and forestry also are part of this category.

Food & Fiber is shown as a separate industry to highlight its importance and to show the relationship between agriculture, its related industries and the food each of us eats every day.

The table below shows what business categories are included in each sector and the sources of information for each.

INDUSTRIAL SECTOR	Source of Sales Output Data
FOOD & FIBER	
AGRICULTURE	
Agricultural Production	2002 Census of Agriculture
Agricultural Services	2002 Census of Agriculture
Ag Processing	2002 Economic Census, Manufacturing
Ag Wholesale	2002 Economic Census, Wholesale Trade
AG RETAIL	
Ag Retail (food & beverage stores, florists)	2002 Economic Census, Retail Trade
Food Service & Beverage (restaurants, bars)	2002 Economic Census, Accommodation & Foodservice
FORESTRY, WOOD PRODUCTS MANUFACTURING & SALES	
Wood Product Manufacturing	2002 Economic Census, Manufacturing
Paper Manufacturing	2002 Economic Census, Manufacturing
Lumber, Plywood, Millwork & Wood Panel Merchant Wholesalers	2002 Economic Census, Wholesale Trade
Paper and paper products	2002 Economic Census, Wholesale Trade
Building Material & Supplies Dealers – forestry-related sales = 17% of total	2002 Economic Census, Retail Trade
MINING INDUSTRIES	
Mining	2002 Economic Census, Mining
Phosphatic Fertilizer Manufacturing	2002 Economic Census, Manufacturing
CONSTRUCTION	
CONSTRUCTION	2002 Economic Census, Construction
NON-AG MANUFACTURING	
MANUFACTURING, less:	2002 Economic Census, Manufacturing
Food Processing	
Wood Product Manufacturing	
Paper Manufacturing	
Phosphatic Fertilizer Manufacturing	
NON-AG WHOLESALE	
WHOLESALE TRADE, less:	2002 Economic Census, Wholesale Trade
Lumber, Plywood, Millwork & Wood Panel Merchant Wholesalers	
Paper and paper products	
Farm & garden machinery & equipment	
Grocery and related products – food = 65% of total	
Flower, Nursery Stock & Florists' Supplies Merchant Wholesalers	
NON-AG RETAIL	
RETAIL TRADE, less:	2002 Economic Census, Retail Trade
Building Material & Supplies Dealers – forestry-related sales = 17% of total	
Building Material & Supplies Dealers – lawn & garden sales = 12% of total	
Nursery, Garden Center, and Farm Supply Stores	
Food and Beverage Stores – food = 65% of total	
Florists	

INDUSTRIAL SECTOR	Source of Sales Output Data
OTHER INDUSTRIES	
UTILITIES	2002 Economic Census, Utilities
TRANSPORTATION & WAREHOUSING	2002 Economic Census, Transportation & Warehousing
INFORMATION	2002 Economic Census, Information
FINANCE	2002 Economic Census, Finance
REAL ESTATE AND RENTAL AND LEASING	2002 Economic Census, Real Estate & Rental & Leasing
ARTS, ENTERTAINMENT AND RECREATION	2002 Economic Census, Arts, Entertainment & Recreation
ACCOMMODATION AND FOODSERVICES less food service & beverage	2002 Economic Census, Accommodation & Foodservices
SERVICES	
PROFESSIONAL, SCIENTIFIC & TECHNICAL SERVICES	2002 Economic Census, Professional, Scientific & Technical Services
MANAGEMENT OF COMPANIES AND ENTERPRISES	2002 Economic Census, Management of Companies & Enterprises
ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIAL SERVICES	2002 Economic Census, Administrative & Support & Waste Management & Remedial Services
EDUCATIONAL SERVICES	2002 Economic Census, Educational Services
HEALTH CARE AND SOCIAL ASSISTANCE SERVICES	2002 Economic Census, Health Care & Social Assistance Services
OTHER SERVICES (EXCEPT PUBLIC ADMINISTRATION)	2002 Economic Census, Other Services

PART 1 FINDINGS: ECONOMIC OUTPUT BY INDUSTRY

POLK COUNTY'S TOTAL ECONOMIC OUTPUT, based on the most recently available U.S. Census data for all economic sectors at the time of this study², was as follows:

- Total sales of all goods and services (gross output) amounted to **\$24.8 billion**;
- There were over **170,000 persons employed**; and
- Total **payroll was \$4.5 billion**.

These figures are the sums of all sales, payroll and employees for all industries in the county. The figures reflect *direct* impacts only.

INDUSTRY RANKINGS

Annual Sales

- *Non-Agricultural Wholesale* ranks first in the county in terms of economic output, with \$5.4 billion in sales, or 21.6% of the total.
- **The *Food & Fiber* sector ranks second.** Its output is \$4.5 billion, representing 18.2% of the county's total output.
- *Non-Agriculture Retail* ranks third, with \$4 billion, or 16% of the total.

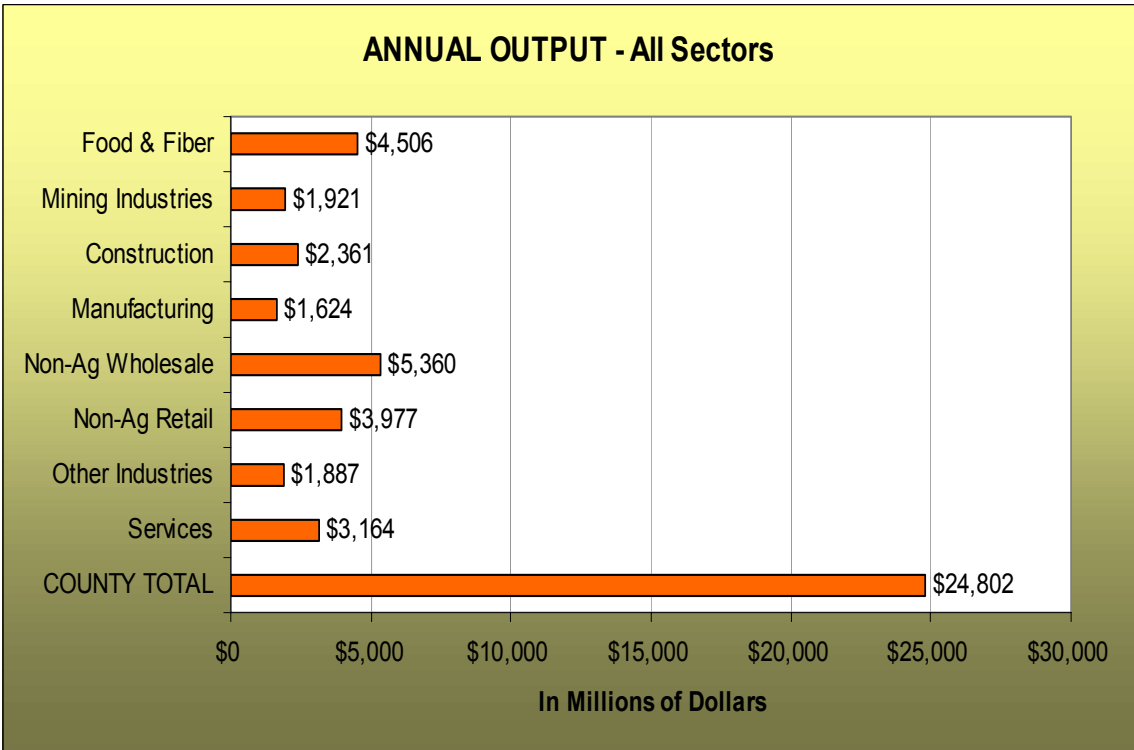
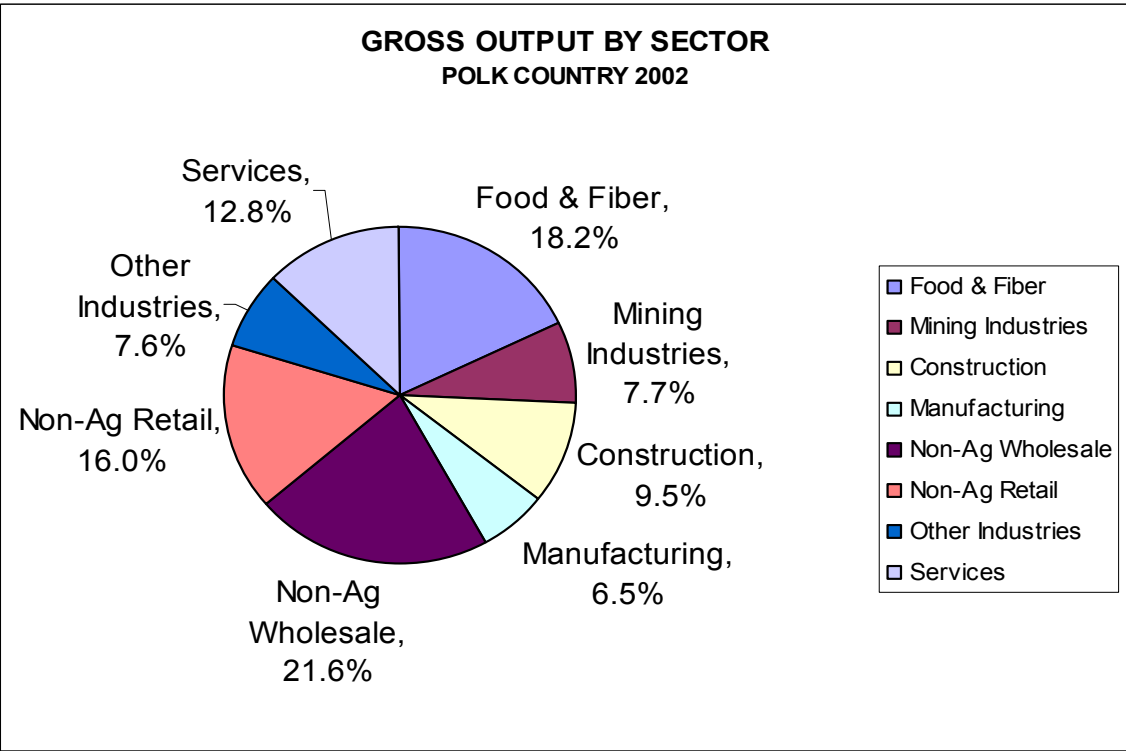
Employment

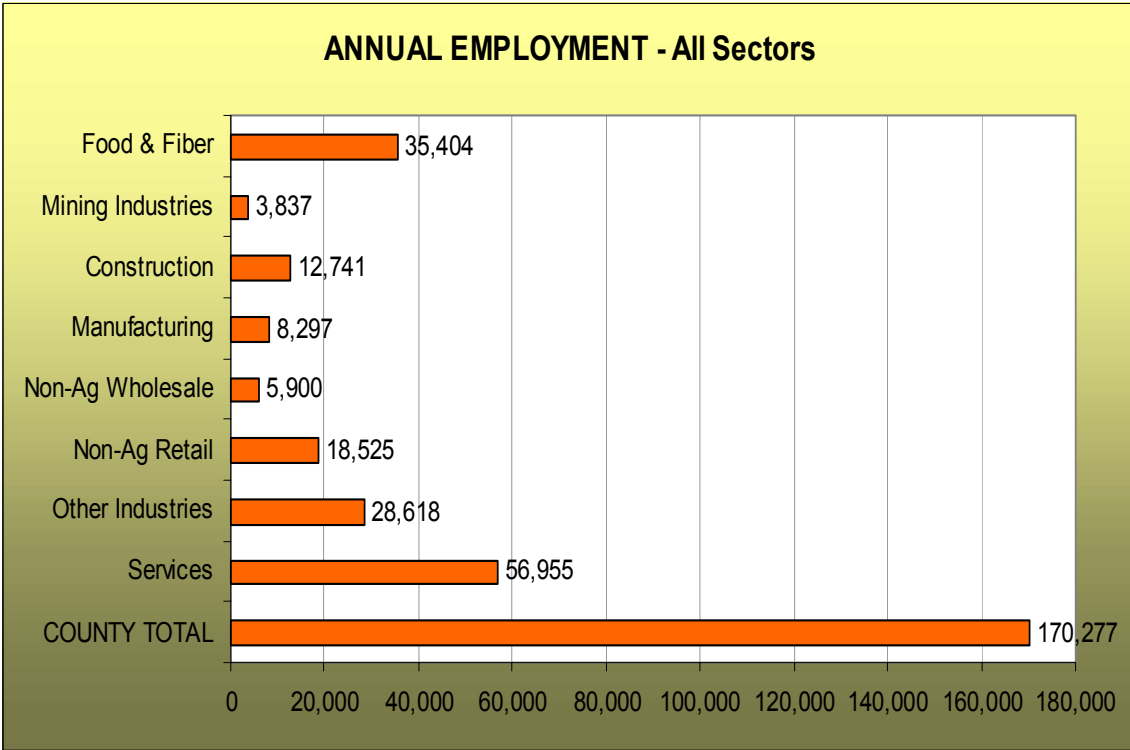
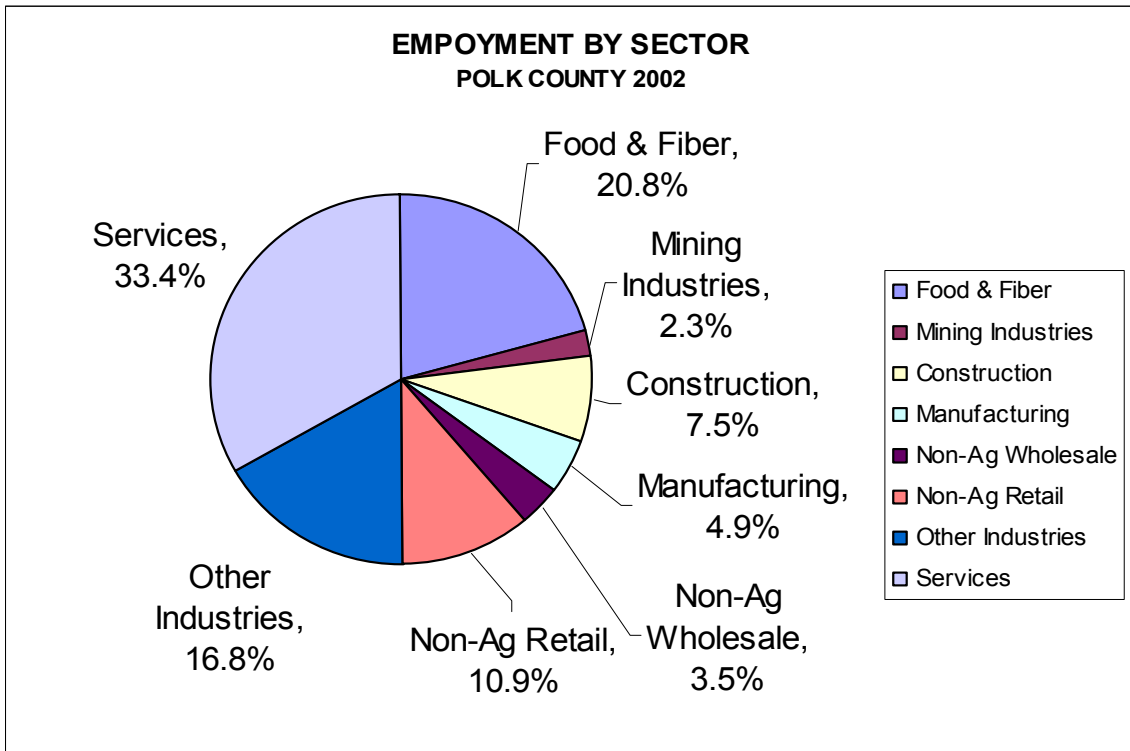
- The *Service* sector takes the lead in the number of people it employs. This sector employs 56,955 people, which is 33.4% of the county's workforce.
- **The second largest employer is *Food & Fiber***, which employs 35,404 people, or 20.8% of the total.
- *Other Industries* is third, employing 28,618 or 16.8% of the total.

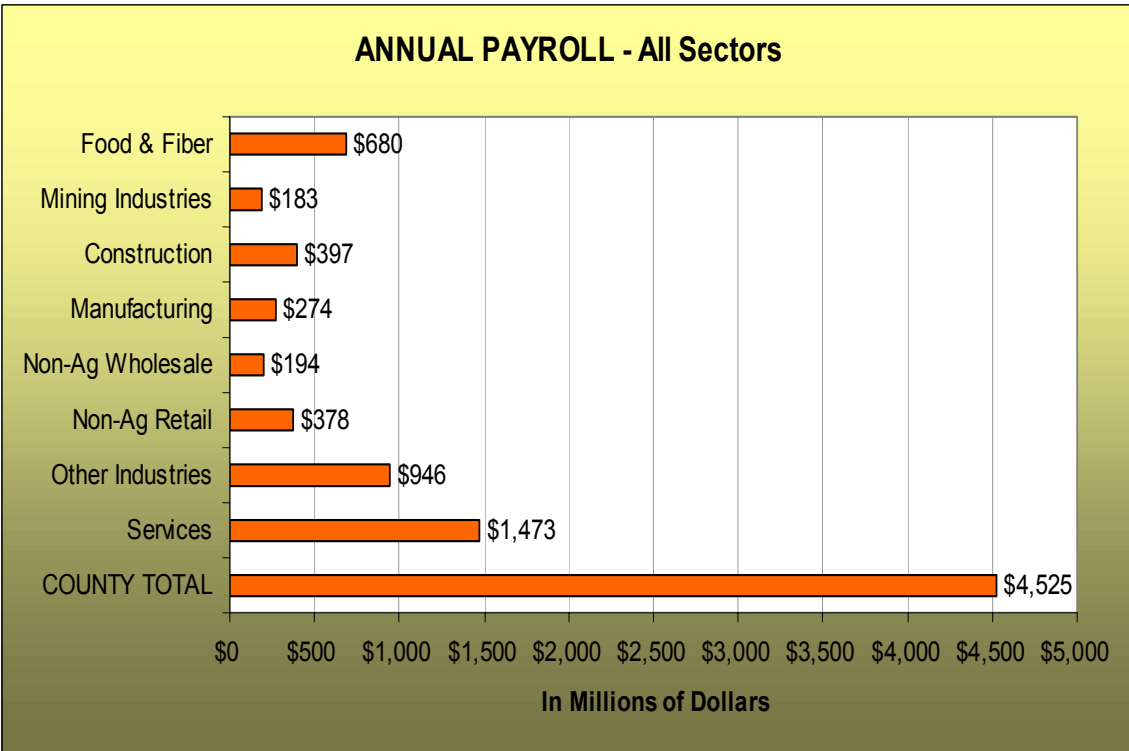
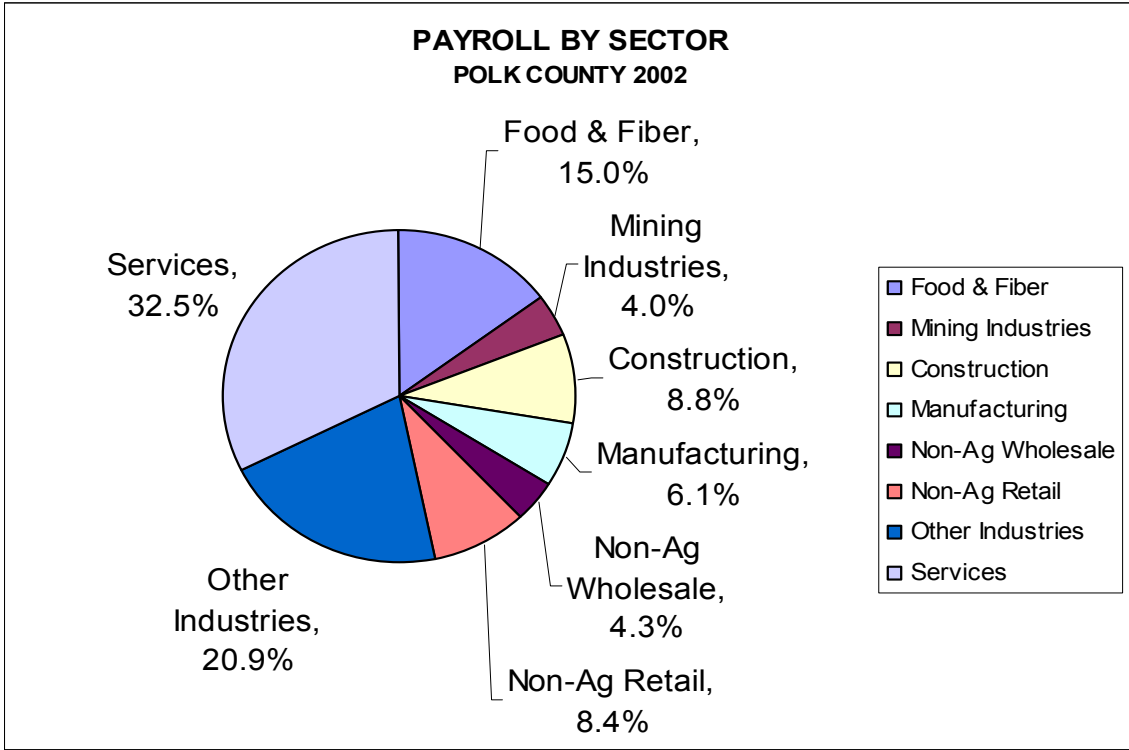
Non-Agricultural Wholesale, which ranked first in economic output, is the sixth largest employer in the county.

Payroll

- The *Services* sector has the highest payroll: \$1.5 billion, 32.5% of the total. This payroll is high because the *Services* category includes highly paid workers such as medical and legal professionals, engineers and computer technicians, as well as personal service workers who often earn low wages.
- The *Other Industries* industry ranks second with \$946 million in payroll, 20.9% of the total.
- **The *Food & Fiber* sector is third in payroll** at \$680 million, 15% of the total.







CATEGORY SUMMARY 2002

CATEGORY	GROSS OUTPUT	PAYROLL	EMPLOYEES
AG PRODUCTION	\$284,787,000	\$125,223,408	7,284
AG SERVICES	\$190,880,005	\$86,642,538	5,514
AG PROCESSING	\$1,500,062,000	\$153,700,000	3,638
AG WHOLESALE	\$1,004,510,250	\$53,925,200	1,744
AG TOTAL	\$2,980,239,255	\$419,491,146	18,180
FORESTRY, WOOD PRODUCT MFG & SALES	\$644,304,720	\$97,913,391	3,048
AG RETAIL	\$494,564,900	\$55,047,310	3,695
FOOD SERVICE & BEVERAGE	\$386,993,000	\$107,180,000	10,482
FOOD & FIBER	\$4,506,101,875	\$679,631,847	35,404
MINING INDUSTRIES	\$1,921,413,915	\$182,698,690	3,837
CONSTRUCTION	\$2,360,819,488	\$397,438,696	12,741
NON-AG MANUFACTURING	\$1,623,707,000	\$274,310,000	8,297
NON-AG WHOLESALE	\$5,360,376,430	\$194,067,769	5,900
NON-AG RETAIL	\$3,977,404,700	\$378,214,330	18,525
OTHER INDUSTRIES	\$1,887,473,022	\$945,713,000	28,618
SERVICES	\$3,164,289,375	\$1,472,833,556	56,955
TOTAL	\$24,801,585,805	\$4,524,907,888	170,277

CATEGORY	GROSS		
	OUTPUT %	PAYROLL %	EMPLOYEES %
AG PRODUCTION	1.1%	2.8%	4.3%
AG SERVICES	0.8%	1.9%	3.2%
AG PROCESSING	6.0%	3.4%	2.1%
AG WHOLESALE	4.1%	1.2%	1.0%
AG TOTAL	12.0%	9.3%	10.7%
FORESTRY, WOOD PRODUCT MFG & SALES	2.6%	2.2%	1.8%
AG RETAIL	2.0%	1.2%	2.2%
FOOD SERVICE & BEVERAGE	1.6%	2.4%	6.2%
FOOD & FIBER	18.2%	15.0%	20.8%
MINING INDUSTRIES	7.7%	4.0%	2.3%
CONSTRUCTION	9.5%	8.8%	7.5%
NON-AG MANUFACTURING	6.5%	6.1%	4.9%
NON-AG WHOLESAL	21.6%	4.3%	3.5%
NON-AG RETAIL	16.0%	8.4%	10.9%
OTHER INDUSTRIES	7.6%	20.9%	16.8%
SERVICES	12.8%	32.5%	33.4%
TOTAL	100.0%	100.0%	100.0%

PART 2:

ECONOMIC IMPACTS OF AGRICULTURE & AGRIBUSINESS

OBJECTIVE: This analysis is designed to calculate the **economic impact** – or **direct, indirect** and **induced** values – of output (sales), employment (jobs) and earnings (payroll) for Polk County's *agriculture & agribusiness* industries. The direct value shows the sales generated by agricultural *production, processing, services* and *wholesaling*. Indirect and induced values represent the amount of economic activity that is generated as a result of each of these agricultural businesses.

The four categories of economic activity that were analyzed are as follows:

- **Agricultural Production** includes the activities directly involved in growing and raising and harvesting products from crops, livestock and ornamental plants;
- **Agricultural Services** includes such things as soil preparation and crop services, veterinary services, farm labor and management services, and horticulture services;
- **Agricultural Processing** includes food related manufacturing such as citrus, dairy, beverages and miscellaneous food & kindred products; and
- **Agricultural Wholesale** includes merchant wholesalers and brokers in industries such as farm supplies, groceries, and beer, wine and liquor.

These analyses provide dollar values for the contributions of **agriculture & agribusiness** to the Polk County economy.

This section also presents additional information such as the amount of federal income tax and property tax generated by businesses in Polk County that are directly related to agriculture as well as associated industries.

METHODOLOGY: Economic impact is the amount of money flowing into the economy and the number of jobs created as a result of a particular industry's sales, plus related sales of supporting industries, and the resulting "ripple effects" caused by these sales through spending by employees who buy consumer goods and services.

Because agricultural production and other agribusinesses produce products or services for sale outside Polk County, which serve to channel outside dollars into the county, they are known as "export" or "basic" industries.

Fifty-seven percent of Polk County's agricultural products are exported to markets outside the county (this is detailed in the table and notes on pages 18 and 19, and on pages B-2 and B-3 of the Appendix). Of the products that are sold locally, a large portion is sold to processing plants which create food products that are then sold outside the

county. All of these sales bring dollars into the county. The agricultural producers and processors, in turn, use these dollars to pay their employees, pay property taxes, and purchase supplies and services. These dollars are then re-spent by each employee, by local governments, and by the businesses providing sales and services to agricultural producers. Thus, the dollars generated from the sale of Polk County agricultural products are circulated and re-circulated throughout the county economy.

This process of expanding the economic employment and income base of Polk County economy through economic interactions of the agriculture industry and other economic sectors is known as the "multiplier effect."

Economic impact, which is the combination of direct cash sales outside the county plus the "multiplier effect" that these sales have on the county's economy, is calculated by using a *Regional Economic Multiplier* computed by the U.S. Department of Commerce.

This multiplier is applied only to the income that results from sales outside the county, not to local sales that are generated within the county.

This multiplier accounts for the *indirect* and *induced* impacts that result when money brought in from outside the county is spent locally. Not all the money coming into the county for agricultural products flows through farmers. Some of it flows through distributors, shippers, packers, processors, farm stands and grocery stores.

1. The first step in this analysis was to determine the *direct* cash value of sales by the agricultural industry outside the county.

Sales numbers were obtained from the *2002 Census of Agriculture* and the *2002 Economic Census, Manufacturing*.

Telephone interviews of extension agents, producers and industry representatives were conducted to determine what percentage of total sales occurs locally, and what percentage represent sales outside the county. In the case of citrus sales, the on-tree value of all citrus grown in the county was calculated by variety, using data published in the *Citrus Summary* for both the 2001-02 and 2002-03 growing seasons.

2. The next step in the analysis was to determine the *indirect* and *induced* impacts of agricultural product sales. *Indirect* impacts include such items as:

- Sales of fertilizers and chemicals to growers;
- Sales of parts and repair services to growers and processors;
- Sales of office supplies, packing materials and business supplies;
and
- Sales of legal, accounting and consulting services.

Each sale by a local business to the agricultural industry represents additional economic activity for the county that, in turn, generates additional jobs and income for Polk County residents as a result of the sales of agricultural products outside the county.

Induced impacts include:

- Spending by employees who earn their income directly from the agricultural industry; and
- Spending by employees who earn their income from businesses that sell products and services to the agricultural industry.

This spending translates into local retail sales; local bank accounts; purchases of consumer products, automobiles and homes; entertainment purchases through local restaurants, theaters and sporting facilities; and purchases of legal, accounting, medical, beauty, cleaning, repair and other personal services.

When sales of agricultural products outside the county increase, a chain reaction of increased local spending is triggered. Businesses that provide services and supplies to the agricultural industry hire new employees and increase their local purchases to meet the increased demands of the agricultural industry. This expansion, in turn, leads to increased hiring, output and local purchases by the firms that supply products and services to these businesses.

At the same time, the additional dollars earned by employees trigger additional spending activity in the county's retail, banking, consumer products, entertainment and personal service industries.

Conversely, when sales of agricultural products outside the county *decrease*, a chain reaction of *decreased local spending* is triggered:

- Without products and services to export to generate sales, an economy will stagnate, and eventually shrink. This is because money is being constantly exported *out* of the county through the purchase of products and services offered by companies in other states and countries, as well as through payments to state and federal agencies, travel and payments on loans held by investors outside the county.
- This is what occurs when a major industry, like agriculture, is lost, or when a factory upon which a community relies for its livelihood closes down.

Helping readers understanding these implications, and the impact that agriculture has on the well-being and wealth of every resident in the

county, is a major focus of this study. That's why it is important to understand the financial transactions and interactions described here.

The *indirect* and *induced* impacts that result from agricultural industry sales were calculated by multiplying the numbers for the *direct* cash sales of agricultural products by the *Regional Economic Multiplier* computed by the U.S. Department of Commerce, Bureau of Economic Analysis, using their Regional Input-Output Modeling System (RIMS II).³

The basis of the RIMS model is a transactions table showing the distribution of sales and the pattern of purchases for each sector of the economy. As Dr. David Mulkey and Dr. Rodney Clouser of the Food and Resource Economics Department at the University of Florida explain (Mulkey et al., 1988):

"A sector consists of a group of firms producing similar types of products ...

"For each sector, the transactions table reflects the dollar value of sales to every other sector and the dollar value of purchases from every other sector. In effect, the table provides a picture of interactions between sectors in a regional economy and allows the flow of dollars to be traced through the economy. This information allows the calculation of multipliers which can be used to assess the total contribution of a particular sector to the economy of a region or state ...

"Multipliers are measured in terms of output, employment, and earnings and were estimated for 531 sectors ... Thus, resulting multipliers capture direct, indirect and induced impacts of each sector on the state and regional economy."⁴

Economic impact is calculated in this section for both *Agricultural Production* and for *Agribusiness* (which includes *Ag Processing*, such as food and beverage plants; *Ag Services*, such as harvesters and crop sprayers; and *Ag Wholesale*, such as grocery product brokers) in order to show the importance of each sector of the agricultural and agribusiness industry.

With the exception of *Agricultural Production* and *Agricultural Services*, which have a *Regional Economic Multiplier* specifically for combining the two categories together, it is not possible to add other categories together. This is because the *Regional Economic Multipliers* used for *Ag Processing* and *Ag Wholesale* includes industries that are affected by these activities, such as local growers who sell raw products to these firms.

Therefore, to add these impacts together would result in overlapping and some double-

counting. Data is not available to segregate the portion of agribusiness that is generated by local agriculture from that portion that is independent.

However, for the purposes of estimating the extent of the economic impact to the county if local agriculture was to disappear, it was assumed that *at least half* of the county's food processing industry would be affected.

This estimate is based on the following considerations:

- Citrus is by far the county's most important agricultural crop, accounting for almost half of agriculture production value.⁵
- According to the *2001-02* and *2002-03 Citrus Summary* produced by the Florida Agricultural Statistical Service, 68% of Polk County's citrus is processed into juice, with the balance packed as fresh fruit.
- The vast majority of this packing and processing takes place in Polk County plants.
- Sixty-four percent of the revenues generated by Polk County's food processing industry are derived from "fruit and vegetable preserving."⁶
- If anything was to happen to the county's citrus industry, all local packers and processors would be adversely affected.
- Local processors currently buy produce from growers outside the county.
- To some degree, the amount of produce purchased from outside the county can be increased to make up for shortfalls in local production. (For example, following three disastrous freezes in the 1980s, Lake County in north central Florida lost all of its citrus production acreage, yet local processors have continued to survive by trucking produce up to their plants from growers in south Florida.)
- Because Polk County is such an important citrus producing region, topping national rankings, and because many of the challenges facing the citrus industry affect growers throughout the state, not just in Polk County, a sustained downturn in local production is also likely to result in a sustained downturn for local packers and processors.
- Hence, the sales volume of packers and processors is dependent to a large degree on local producers.
- For the purposes of this analysis, it was estimated that *at least half* of the county's food processing industry could be adversely affected by a loss of local production.

PART 2 FINDINGS:

ECONOMIC IMPACTS OF AGRICULTURE & AGRIBUSINESS

AGRICULTURAL PRODUCTION

<u>Annual Sales:</u>	\$285 million
<u>Employment:</u>	7,284 jobs
<u>Payroll:</u>	\$125 million in annual earnings

ECONOMIC IMPACT:

When the *Regional Economic Multipliers* are used, these figures reveal an economic impact of:

- \$406 million in annual sales;
- 11,038 jobs; and
- \$208 million in earnings.

OTHER IMPACTS

Agricultural production *alone* generates:

- approximately \$7.3 million in federal income taxes a year from employees, and
- \$6 million in property taxes.⁷
- It has a capital investment of \$1.9 billion.

AGRICULTURAL SERVICES

<u>Annual Sales:</u>	\$191 million in direct output
<u>Employment:</u>	5,514 jobs
<u>Payroll:</u>	\$87 million in earnings

ECONOMIC IMPACT:

When the *Regional Economic Multipliers* are used, these figures reveal an economic impact of:

- \$199 million in sales;
- 5,577 jobs; and
- \$89 million in earnings.

AGRICULTURAL PRODUCTION & SERVICES -- COMBINED

The *Regional Economic Multipliers* for agricultural production and services combined were used to obtain the follow results:⁸

COMBINED ECONOMIC IMPACT:

- \$605 million in sales;
- 16,615 jobs; and
- \$297 million in earnings.

AGRICULTURAL PROCESSING

<u>Annual Sales:</u>	\$1.5 billion
<u>Employment:</u>	3,638 jobs
<u>Payroll:</u>	\$154 million in earnings

ECONOMIC IMPACT:

When the *Regional Economic Multipliers* are used, these figures reveal an economic impact of:

- \$2.5 billion in sales;
- 7,351 jobs; and
- \$343 million in earnings.

AGRICULTURAL WHOLESALE

<u>Annual</u>	
<u>Sales Margin:</u>	\$100 million
<u>Employment:</u>	1,744 jobs
<u>Payroll:</u>	\$54 million in earnings

ECONOMIC IMPACT:

When the *Regional Economic Multipliers* are used, these figures reveal an economic impact of:

- \$132 million in output;
- 2,551 jobs; and
- \$70 million in earnings.

TOTAL ECONOMIC LOSS IF LOCAL AGRICULTURE WAS TO DISAPPEAR

- **\$1.85 billion in annual sales**
- **20,290 jobs**
- **\$468 million in annual earnings**

These numbers include the combined economic impact of agriculture production and agriculture services:

- \$605 million in sales;
- 16,615 jobs; and
- \$297 million in earnings.

In addition, the numbers include one-half of the economic impact of the county's agricultural processing industry. Normally, a food processing industry can operate independently of local agriculture, since packers and processors can buy product outside the local area for their operations.

However, because 64% of revenues generated by the food processing industry in Polk County come from citrus⁹, and Polk County is the state leader in citrus production, it has been estimated for the purposes of this calculation that at least half of Polk County's food processing industry relies on local production. In other words, if Polk County lost its local agriculture, it also would stand to lose at least half of its food processing industry.

These numbers are based upon published information from the following sources:

Employment and payroll: Florida State Department of Labor and U.S. Census Bureau

Farm-gate Sales: U.S. Department of Agriculture

Agribusiness Output: U.S. Census Bureau

Regional Economic Multipliers: Bureau of Economic Analysis

Capital Investment: U.S. Census Bureau

For a pictorial depiction of this data, see the charts on pages 25 and 26.

Two tables showing this analysis also appear on the following pages, one entitled "Economic Impacts of Agriculture & Agribusiness," and the second entitled "Other Economic Contributions of Agriculture & Agribusiness."

**ECONOMIC IMPACTS OF AGRICULTURE & AGRIBUSINESS
POLK COUNTY, FLORIDA
2002**

AGRICULTURAL PRODUCTION

	OUTPUT	PAYROLL	EMPLOYMENT
Total (1)	\$284,787,000	\$125,223,408	7,284
Percent Exported (2)	x 57%	57%	57%
Exported Value	\$161,160,963	\$70,863,927	4,122
Regional Economic Multiplier (3)	x 1.7542	2.1635	1.9108
Plus Local (Total less Exported):	+ \$282,708,562 \$123,626,037	\$153,314,105 \$54,359,481	7,876 3,162
ECONOMIC IMPACT:	\$406,334,599	\$207,673,587	11,038

AGRICULTURAL SERVICES

Total (1)	\$190,880,005	\$86,642,538	5,514
Percent Exported (4)	x 5%	5%	5%
Exported Value	\$9,544,000	\$4,332,127	276
Regional Economic Multiplier (3)	x 1.8624	1.5095	1.2281
Plus Local (Total less Exported):	+ \$17,774,746 \$181,336,005	\$6,539,346 \$82,310,411	339 5,238
ECONOMIC IMPACT:	\$199,110,751	\$88,849,757	5,577

AGRICULTURAL PROCESSING

Total (1)	\$1,500,062,000	\$153,700,000	3,638
Percent Exported (4)	x 99%	99%	99%
Exported Value	\$1,485,061,380	\$152,163,000	3,602
Regional Economic Multiplier (3)	x 1.6819	2.2469	2.0308
Plus Local (Total less Exported):	+ \$2,497,724,735 \$15,000,620	\$341,895,045 \$1,537,000	7,314 36
ECONOMIC IMPACT:	\$2,512,725,355	\$343,432,045	7,351

AGRICULTURAL WHOLESALE

Total Sales(1)	\$1,004,510,250		
Margin (5)	10%		
Total	\$100,451,025	\$53,925,200	1,744
Percent Exported (2)	x 57%	57%	57%
Exported Value	\$56,845,235	\$30,516,271	987
Regional Economic Multiplier (3)	x 1.5466	1.5375	1.8174
Plus Local (Total less Exported):	+ \$87,916,841 \$43,605,790	\$46,918,766 \$23,408,929	1,794 757
ECONOMIC IMPACT:	\$131,522,630	\$70,327,695	2,551

FOOTNOTES:

1. Data from the 2002 Agricultural Census, 2002 Economic Census and Florida Labor ES202 reports for 2002. For more detail, see "Total Economic Output of Polk County: Breakdown by Industry" in Appendix.

2. Approximately 90% of citrus grown in Polk County is packed or processed locally, according to Chris Oswalt, citrus agent for the Polk County Cooperative Extension Service. Citrus production in Polk County was 39,074,000 boxes for the 2001-2002 growing season, according to the "Citrus Summary, 2001-02" (Orlando, FL: Florida Agricultural Statistical Service), inside front cover. The on-tree value of this citrus, calculated by variety, was \$135,169,060, per the "Citrus Summary, 2002-03," pp. 22-27. On-tree value was used in this calculation, since this represents the cash receipts received by the grower, without picking and hauling costs, which are included in the "Agricultural Services" category.

A leading nursery owner interviewed for the 1999 study stated that 7% of all nursery products are sold locally, while the rest are sold outside the county, a percentage confirmed in Sept. 2005 by Laura Miller, horticulture agent for the Polk County Cooperative Extension Service. For 2002, 7% of nursery sales was \$1,978,900. Thus, 56.59% of Polk County agricultural production was exported outside the county, as shown below:

Total agricultural production:	\$284,787,000
Less 90% of citrus (which goes to local processing or packing plants):	\$121,652,154
Less nursery products sold locally:	\$1,978,900

	\$161,155,946
Divided by total agricultural production:	\$284,787,000
Percent of Polk Co. agricultural production exported outside county:	56.59%

3. Enterprise Florida, RIMSII multipliers for Polk County from the U.S. Department of Commerce.

4. The agricultural processing number is based on an estimate provided by the Polk County Cooperative Extension Service. The agricultural services number is based on the assumption that county service firms would provide services primarily to local farms.

5. According to Enterprise Florida, Wholesale and Retail output -- for purposes of multipliers -- includes only the "margin", or sales less cost of the goods being wholesaled. Ten percent was the normal margin they reported.

**OTHER ECONOMIC CONTRIBUTIONS OF AGRICULTURE & AGRIBUSINESS
POLK COUNTY, FLORIDA
2002**

	<u>INCOME TAX GENERATED</u>	<u>PROPERTY TAX GENERATED</u>	<u>CAPITAL INVESTMENT</u>
AGRICULTURAL PRODUCTION	\$7,316,351	NA	NA
AG SERVICES	\$4,315,721	NA	NA
AG PROCESSING	\$17,327,717	NA	NA
AGRICULTURAL WHOLESALING	\$6,765,755	NA	NA
AGRICULTURALLY CLASSIFIED PROPERTY (1)	NA	\$6,089,000	NA
AGRICULTURAL LAND AND BUILDINGS (2)	NA	NA	\$1,835,381,000
FARM EQUIPMENT AND MACHINERY (3)	NA	NA	\$113,621,000
	<u>\$35,725,544</u>	<u>\$6,089,000</u>	<u>\$1,949,002,000</u>

Footnotes:

1. '2002 Census of Agriculture, Florida (Washington, D.C.: U.S. Department of Agriculture), p. 249.
2. Ibid, p. 277.
3. Ibid, p. 450.

PART 3:

ECONOMIC IMPACTS OF MINING & FERTILIZER PRODUCTION

OBJECTIVE: This analysis is designed to calculate the **economic impact** – or **direct, indirect** and **induced** values – of output (sales), employment (jobs) and earnings (payroll) for Polk County's *mining & phosphatic fertilizer manufacturing* industries. The direct value shows the revenues generated by mining and the manufacture of fertilizers. Indirect and induced values represent the amount of economic activity that is generated as a result of each of these businesses.

METHODOLOGY: The methodology used to calculate the economic impacts of Polk County's mining industry is the same as was used for *Part 2, Economic Impacts of Agriculture & Agribusiness* (see description of the methodology, pages 10-14).

Sales data for mining was obtained from the *2002 Economic Census, Mining*. Employment and payroll data was obtained from *2002 County Business Patterns, Polk County, Florida*, which also is published by the U.S. Department of Commerce, Bureau of Census, and from the *2002 Annual Edited ES-202*, published by the Florida Agency for Workforce Innovation, Labor Market Statistics.

While the *Economic Census, Mining* provides data only on the state level, the *County Business Patterns* provides data on a county level. As a result, it was possible to compare figures in the two Census Bureau publications, reporting data for the same year, to calculate output on the county level. This calculation was aided by referring to the *ES-202* report, which also gives employment and payroll data on county level. The calculation was further aided by referring to the Polk County Property Appraiser list of taxable values, which lists the number of establishments covered by each NAICS code. By using this data, it was possible to determine how many of the state's mining operations are located in Polk County for each type of ore mined (limestone, sand and gravel, clay, phosphate). County-level sales data for phosphatic fertilizer manufacturing were obtained from the *2002 Economic Census, Manufacturing*. Data on local sales and sales outside the county were obtained from interviews with industry officials.

Multipliers were obtained from Enterprise Florida. The *Regional Economic Multipliers* used in this study were computed by the U.S. Department of Commerce, Bureau of Economic Analysis, using their Regional Input-Output Modeling System (RIMS II).

It is not possible to add the mining and phosphatic fertilizer manufacturing categories together, without first backing out the percentage of output, payroll and employment represented by local sales. This is because the *Regional Economic Multipliers* for *Phosphatic Fertilizer Manufacturing* calculate all the affects that ripple through the local economy as a result of this activity. Therefore, the impacts of local sales must be removed to show the impacts only of sales outside the county and avoid double-counting.

PART 3 FINDINGS:

ECONOMIC IMPACTS OF MINING & FERTILIZER PRODUCTION

MINING

<u>Annual Sales:</u>	\$524 million
<u>Employment:</u>	1,994 jobs
<u>Payroll:</u>	\$85 million in annual earnings

ECONOMIC IMPACT:

When the *Regional Economic Multipliers* are used, these figures reveal an economic impact of:

- \$619 million in annual sales;
- 2,807 jobs; and
- \$106 million in earnings.

PHOSPHATIC FERTILIZER MANUFACTURING

<u>Annual Sales:</u>	\$1.4 billion in direct output
<u>Employment:</u>	1,843 jobs
<u>Payroll:</u>	\$98 million in earnings

ECONOMIC IMPACT:

When the *Regional Economic Multipliers* are used, these figures reveal an economic impact of:

- \$2.9 billion in sales;
- 9,152 jobs; and
- \$377 million in earnings.

COMBINED IMPACT:

Mine Production (less local sales) & Fertilizer Manufacturing:

- **\$3.2 billion in sales;**
- **10,563 jobs; and**
- **\$424 million in earnings.**

For a pictorial depiction of this data, see the charts on pages 30 and 31.

**ECONOMIC IMPACTS OF MINING & FERTILIZER PRODUCTION
POLK COUNTY, FLORIDA
2002**

MINING		OUTPUT	PAYROLL	EMPLOYMENT
Total (1)		\$523,587,915	\$84,692,690	1,994
Percent Exported (6)	x	30%	30%	30%
<hr/>				
Exported Value		\$157,076,375	\$25,407,807	598
Regional Economic Multiplier (3)	x	1.6059	1.8425	2.3592
<hr/>				
Plus Local (Total less Exported):	+	\$252,248,950	\$46,813,884	1,411
		\$366,511,541	\$59,284,883	1,396
<hr/>				
ECONOMIC IMPACT:		\$618,760,490	\$106,098,767	2,807
		=====	=====	=====

PHOSPHATIC FERTILIZER MANUFACTURING		OUTPUT	PAYROLL	EMPLOYMENT
Total (1)		\$1,397,826,000	\$98,006,000	1,843
Percent Exported (6)	x	99%	99%	99%
<hr/>				
Exported Value		\$1,383,847,740	\$97,025,940	1,825
Regional Economic Multiplier (3)	x	2.1073	3.8769	5.0059
<hr/>				
Plus Local (Total less Exported):	+	\$2,916,182,343	\$376,159,867	9,134
		\$13,978,260	\$980,060	18
<hr/>				
ECONOMIC IMPACT:		\$2,930,160,603	\$377,139,927	9,152
		=====	=====	=====

FOOTNOTES:

1. Data from the 2002 Agricultural Census, 2002 Economic Census and Florida Labor ES202 reports for 2002. For more detail, see "Total Economic Output of Polk County: Breakdown by Industry" in Appendix.

3. Enterprise Florida, RIMSII multipliers for Polk County from the U.S. Department of Commerce.

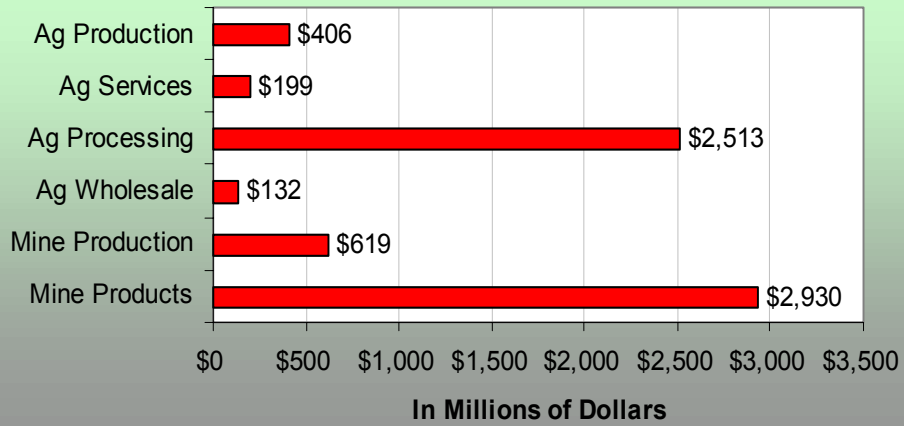
6. According to Tom Myers at Mosaic, approximately 70% of the ore that is mined is processed in fertilizer manufacturing plants located in Polk County. Of the phosphate fertilizer/feed products produced in Mosaic plants, 99% of the products are used outside Polk County.

**POLK COUNTY
SUMMARY**

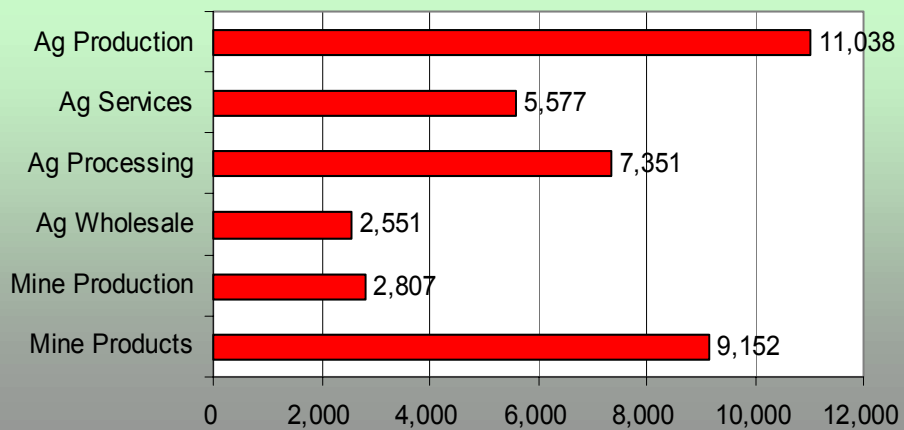
	OUTPUT	PAYROLL	EMPLOYMENT
ECONOMIC IMPACT OF AGRICULTURAL PRODUCTION	\$406,334,599	\$207,673,587	11,038
ECONOMIC IMPACT OF AGRICULTURAL PROCESSING	\$2,512,725,355	\$343,432,045	7,351
ECONOMIC IMPACT OF AGRICULTURAL SERVICES	\$199,110,751	\$88,849,757	5,577
ECONOMIC IMPACT OF AGRICULTURAL WHOLESALE	\$131,522,630	\$70,327,695	2,551
ECONOMIC IMPACT OF MINING	\$618,760,490	\$106,098,767	2,807
ECONOMIC IMPACT OF FERTILIZER MANUFACTURING	\$2,930,160,603	\$377,139,927	9,152
VALUE OF LOCAL PRODUCTION			
ECONOMIC IMPACT OF AGRICULTURAL PRODUCTION	\$406,334,599	\$207,673,587	11,038
ECONOMIC IMPACT OF AGRICULTURAL SERVICES	\$199,110,751	\$88,849,757	5,577
50% OF AGRICULTURAL PROCESSING	\$1,256,362,678	\$171,716,022	3,675
	\$1,861,808,027	\$468,239,366	20,290
ECONOMIC IMPACT OF MINING (exported value only)	\$252,248,950	\$46,813,884	1,411
ECONOMIC IMPACT OF FERTILIZER MANUFACTURING	\$2,930,160,603	\$377,139,927	9,152
	\$3,182,409,552	\$423,953,811	10,563
TOTAL VALUE OF LOCAL PRODUCTION	\$5,044,217,579	\$892,193,177	30,854

For a pictorial depiction of this data, see the charts on following pages.

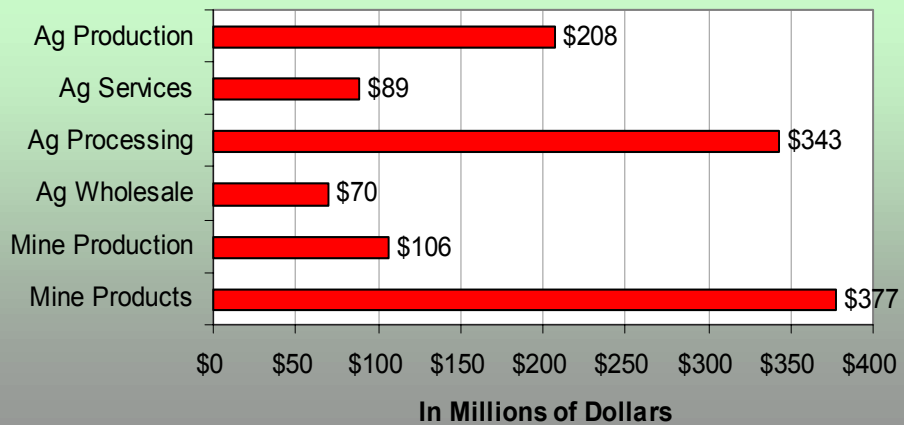
TOTAL ECONOMIC IMPACT - OUTPUT

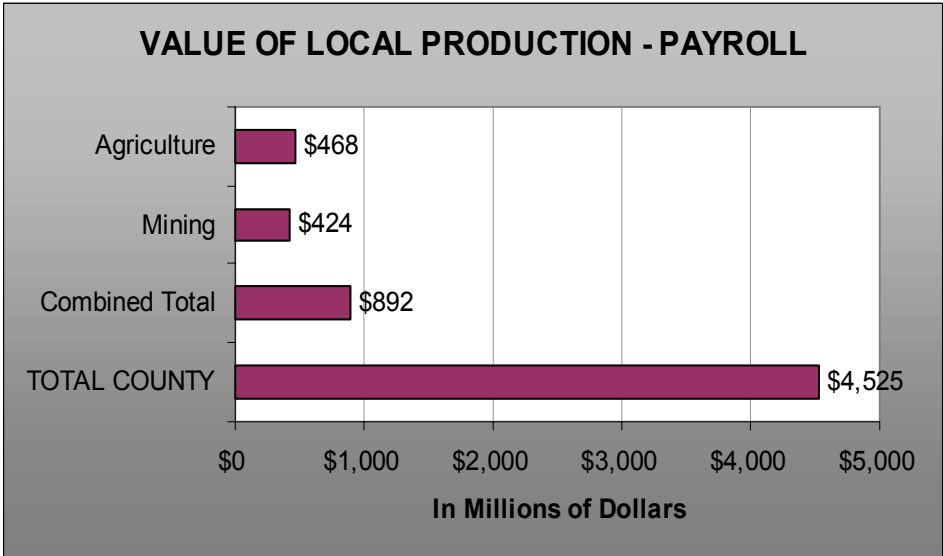
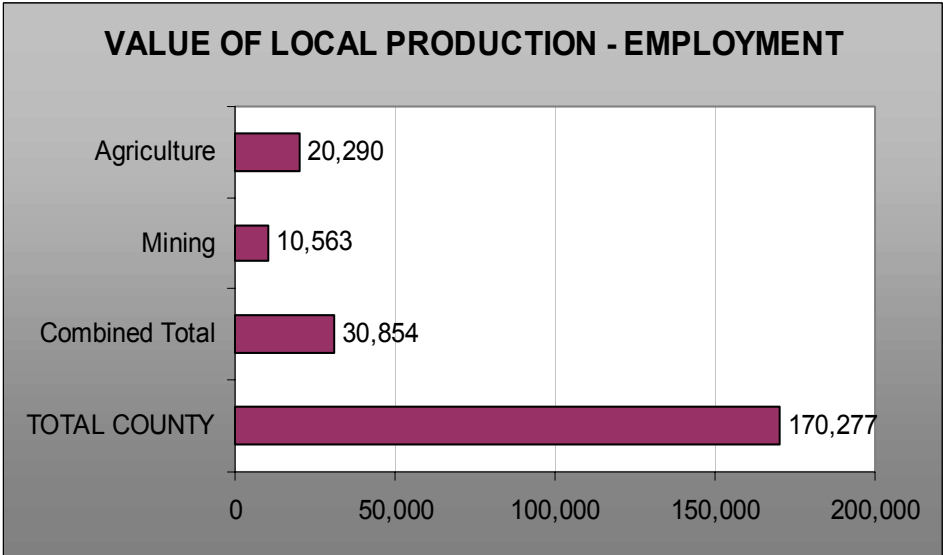
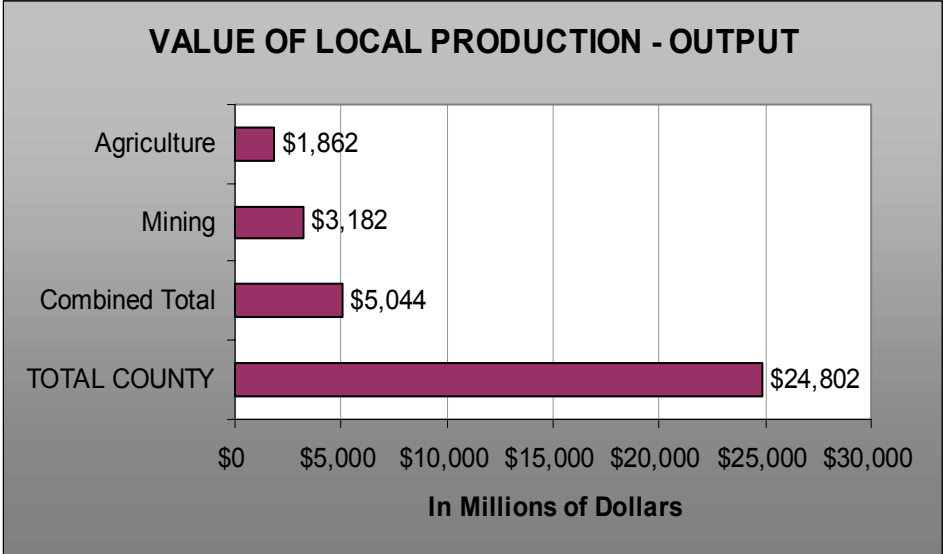


TOTAL ECONOMIC IMPACT - EMPLOYMENT



TOTAL ECONOMIC IMPACT - PAYROLL





PART 4:

FISCAL IMPACT ANALYSIS COMMUNITY REVENUES & EXPENSES

OBJECTIVE: The Analysis of Community Revenues & Expenses is designed to:

1. Take the total monies generated for and spent by Polk County government and schools, and break down each revenue and expense item by land use.
2. Present the results in two ways:
 - First, to show the revenues generated and the expenses created by each commercial and industrial land use category as percentages of total revenue and of total expenses.
 - Second, to present the revenues and expenses for these land use categories as ratios in order to show which land uses create a surplus, how much of a surplus these land uses generate for each \$1 of revenue generated, and which land uses create a deficit.
3. Based on these results, show how much these land uses contribute to the total amount of funds needed to provide the public services and facilities enjoyed by Polk County residents and visitors.

METHODOLOGY: The Analysis of Community Revenues & Expenses was done by reviewing Polk County government and school financial records, as well as data published by the state and federal governments to identify revenues and expenditures generated by specific land uses.

"Revenue" represents all operating funds for county government and schools and includes property taxes, fees, state and federal aid and other taxes. These revenue and expense items were then allocated to the categories using the allocation method most appropriate for that land use. The decision as to which allocation method was "most appropriate" was made by examining the Polk County Budget book as well as other documents to identify the sources of revenues by major line item for each department or fund and the recipients of each department's services, again by major line item.

The major allocation methods include *taxable value*, *percent of building permits issued*, *population* and *land parcels*. (Details on these allocation methods can be found on page C-1 of the Appendix. Pages C-7 through C-11 of the Appendix show in the far right column which allocation method was used for each line item.)

These allocations methods were used to help answer two questions: what land use category or categories are the sources of a revenue item, and what land use category or categories incur an expense?

For example, public safety expenses for fire, police and ambulances can occur for any land use category – where people live, where people work, where people shop, in institutional and government buildings, where people play, even on vacant parcels of property. So all parcels of land potentially can incur these expenses. But, in fact, it is *people* who primarily require these services, so the allocation method used is *population*. County employment data is then used to attribute costs according to the number of people who use each land use, based on where people both live and work.

Elementary and secondary school expenses, on the other hand, are incurred as a result of where the source of the expense – children – lives. Hence, the allocation method used for all school expenses for school-age children is *residential land uses*. Expenses for adult education, on the other hand, are allocated to other land uses based on the number of people employed in working at businesses located on these land uses.

The figures used in this section are **actual** revenues and expenses. They therefore include not only expenditures for actual services rendered, but also any expenses for minimum levels of service that are required but not necessarily used, such as stand-by pay for emergency personnel and rural roads that have excess capacity compared to urban streets.

The Community Revenues and Expenses section (CRE) was done in a step by step process. The spreadsheets on pages C-7 through C-11 in the Appendix list all Polk County government and Polk County school revenues and expenditures for the year 2004. These revenues and expenditures were broken down into the following land use categories using the appropriate allocation, according to the source of the revenue and the cause of each expenditure:

The *Commercial* land use category includes all improved commercial uses, except ag-related wholesale outlets and greenhouses.

The *Industrial* category includes all improved industrial uses, except lumber yards, canneries, food processing and mineral processing.

The *Agricultural Related* category includes all improved agriculture uses: crop and grazing land; citrus groves; poultry; aquaculture; bees; dairies; ornamentals; and commercial and industrial uses related to agriculture, including greenhouses, canneries and food processing..

The *Mining* category includes all mining lands, sub-surface rights and mineral processing uses.

The *Vacant* category includes vacant residential lots, vacant commercial and industrial land and vacant institutional land.

The *Open* category includes publicly owned forests, parks and recreation land; other state owned and federally owned park land, and non-agricultural acreage.

The *Other* category includes improved institutional uses; improved government owned land; and land uses such as solid waste disposal and drainage reservoirs.

Finally, calculations also were made for the *Residential* category, which includes all improved residential uses. This calculation was necessary so all revenues and expenditures could be counted and allocated to the proper categories. However, the results of this calculation for the *Residential* category are not reported in this study.

The purpose of this study is to measure the contributions that agriculture, agribusiness and mining make, both to the Polk County economy, and to the services that county agencies and schools provide to the residents of Polk County. This study is not intended, nor should it be used, as a referendum on the positive or negative impacts of residential development. Unfortunately, results from the 1999 study were used in this way. Moreover, these results were sometimes pulled out of context and used in debates about development proposals, without any regard or reference to the reason these results were included in the 1999 study – which was as a comparison, to help show the positive benefits of agricultural land uses.

To avoid this problem in the future, results regarding residential land uses are not reported.

The calculations used to determine the findings for this section of the study are laid out in detail in the spreadsheets in the Appendix.

Each land use category can be further broken down into more specific land uses. The Polk County Property Appraiser's Office has established 189 land use codes, broken down under 86 land use categories, to describe various types of land uses in the county. A summary of this data, showing taxable values, acreages and numbers of parcels for each major land use category – *residential, commercial, industrial, agriculture, mining, vacant, open* and *other* – appears on page 34, and on page C-2 of the Appendix

For the purposes of this study, revenues and expenses were broken out only by the major *categories* of land use.

These categories are useful for demonstrating the basic characteristics that are shared by the specific land uses that are included under each category, and for underscoring the attributes that should be kept in mind about these land uses (i.e., what services are required, how much these services cost, both in the short term and long term, and how these costs can be offset by pairing up uses from different categories) when land use decisions are being made.

PART 4 FINDINGS: FISCAL IMPACT ANALYSIS OF COMMUNITY REVENUES & EXPENSES

THE ANALYSIS OF COMMUNITY REVENUES & EXPENSES reveals that all types of commercial and industrial land use, including agricultural uses of land, more than pay for the public services they require. The analysis also shows that these land uses generate a surplus in revenues and thus supply funding to provide public services for all the residents and visitors to Polk County.

A deficit was generated by only one of the land use categories for which calculations were done – the *other* category, which includes institutions such as hospitals and schools and government buildings. This is understandable since many of these land uses are tax exempt and do not pay property taxes, but do require public services.

Land use categories that generate a deficit should not be viewed negatively. It takes a wide variety of land uses to make up the necessary fabric of a community. By their very nature, some land uses require more public services than others. *People create the need for public services*, and the places where people congregate and spend most of their time require more services. It is therefore unrealistic to expect all land uses to pay their way.

Also, some types of land use that generate a deficit meet specific needs within a community – such as hospitals and schools and affordable housing. It is important to ensure the needs of all citizens are accommodated.

Hence, the emphasis in community planning should be on developing a good mix of land uses from all standpoints – aesthetic appeal, cultural opportunity, economic development – and on balancing land uses that require the most public services with land uses that require fewer services and generate a surplus in revenues over expenditures.

Land uses that generate a surplus in revenues help to balance budgets, help shoulder the burden of paying for necessary services and ultimately allow for higher levels of service, and a higher quality of life for the community as a whole.

The purpose of this analysis is to demonstrate to what degree the county's commercial and industrial land uses – and, in particular, its agricultural and mining land uses – help to contribute to the budgets for county agencies and schools, and help to pay for the services that all residents enjoy.

Without these revenues, services would have to be cut back or taxes would have to be raised in order to maintain service levels. This is why it is important to ensure that future land use decisions take the fiscal impacts of different land uses into account, so that an effort can be made to retain or encourage land uses that generate a surplus when land uses that require a large number of public services are being considered or expanded.

It is much easier – and politically much less painful – to pay for public services by encouraging land uses that generate a surplus, and to do so at the time that land uses are being approved that increase the demands for public services, than by allowing deficits to occur and to make up for these deficits through cuts in services, deferred maintenance or increases in fees and taxes.

Most of the land uses that generate surpluses in revenue also benefit the community in multiple ways, by attracting capital investment and offering economic opportunity and jobs.

For more detail on these calculations, see the table on page 33 and pages C-1 through C-12 of the Appendix.

<u>CATEGORY</u>	<u>% of Total REVENUES</u>	<u>% of Total EXPENSES</u>
COMMERCIAL:	10.6%	2.3%
INDUSTRIAL:	2.7%	1.0%
AGRICULTURAL RELATED:	2.2%	0.5%
MINING:	0.5%	0.1%
VACANT:	3.5%	0.5%
OPEN:	1.3%	0.5%
OTHER:	1.5%	1.7%
<u>TOTAL:</u>	<u>22.3%</u>	<u>6.6%</u>

This analysis also reveals that for every \$1.00 generated through *agricultural related* land use, the county spends only \$0.22 in services, a ratio of \$1.00 : \$0.22.

Dollar for dollar, therefore, *agricultural related* land uses create a surplus of 78 cents.

This surplus in revenues over expenses helps to pay for the services required by all county residents.

The ratios for other commercial and industrial land use categories are shown on the next page:

Ratio of REVENUES to EXPENSES (per dollar)

COMMERCIAL: (creates a \$0.78 surplus)	\$1.00	:	\$0.22
INDUSTRIAL: (creates a \$0.44 surplus)	\$1.00	:	\$0.36
AGRICULTURAL RELATED: (creates a \$0.78 surplus)	\$1.00	:	\$0.22
MINING: (creates a \$0.73 surplus)	\$1.00	:	\$0.27
VACANT: (creates an \$0.85 surplus)	\$1.00	:	\$0.15
OPEN: (creates a \$0.60 surplus)	\$1.00	:	\$0.40
OTHER: (results in a \$0.14 deficit)	\$1.00	:	\$1.14

A table giving a detailed breakdown of revenues and expenses by land use category appears on the next page. This is followed by a table showing the taxable value, acreages and number of parcels for each category of land use. A series of graphs that visually depict the relationships between various land use categories appear on the pages following the two tables.

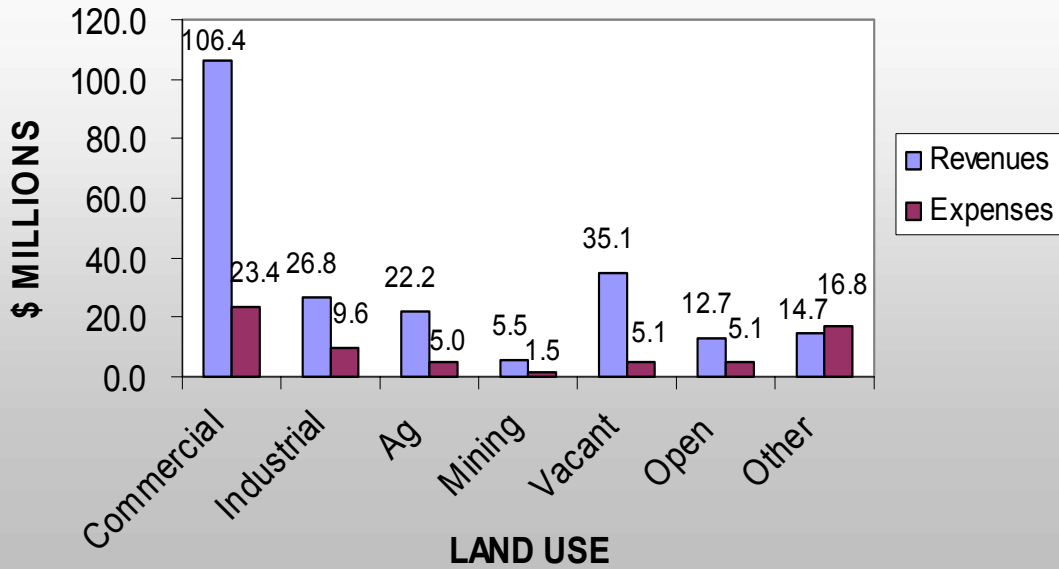
PERCENTS AND RATIOS BY LAND USE: POLK COUNTY, FLORIDA

	COMMERCIAL	INDUSTRIAL	AGRICULTURE & AGRIBUSINESS	MINING
TOTAL COUNTY & SCHOOL REVENUE:	\$106,416,127	\$26,775,449	\$22,200,353	\$5,482,892
PERCENT OF TOTAL:	10.6%	2.7%	2.2%	0.5%
TOTAL COUNTY & SCHOOL EXPENSES:	\$23,338,882	\$9,586,619	\$4,954,817	\$1,480,675
PERCENT OF TOTAL:	2.3%	1.0%	0.5%	0.1%
=====				
REVENUE TO EXPENSES	\$1.00 to \$0.22	\$1.00 to \$0.36	\$1.00 to \$0.22	\$1.00 to \$0.27

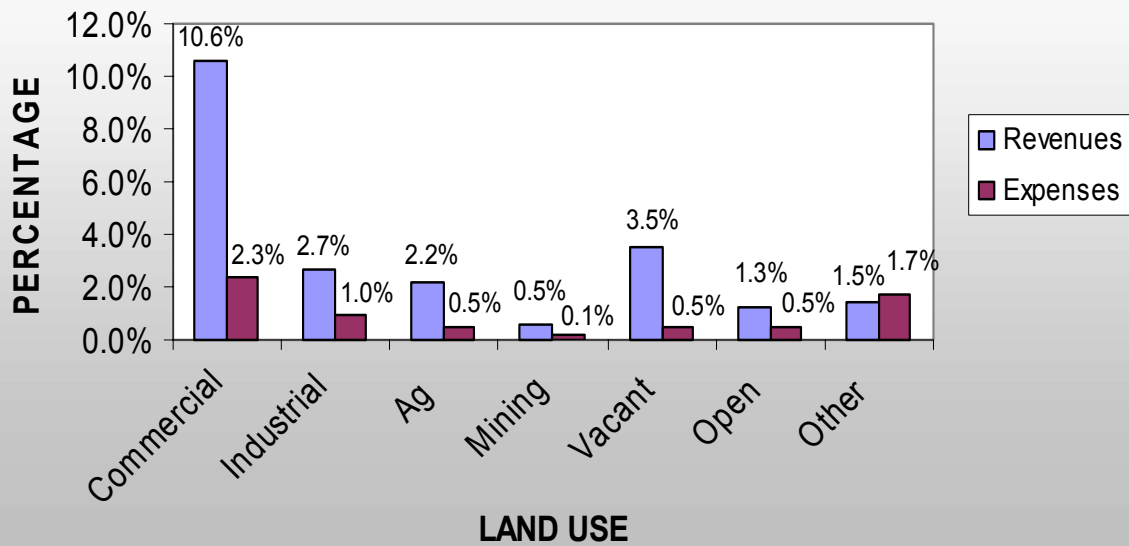
	VACANT	OPEN	OTHER
TOTAL COUNTY & SCHOOL REVENUE:	\$35,053,377	\$12,709,287	\$14,670,839
PERCENT OF TOTAL:	3.5%	1.3%	1.5%
TOTAL COUNTY & SCHOOL EXPENSES:	\$5,143,412	\$5,067,023	\$16,796,191
PERCENT OF TOTAL:	0.5%	0.5%	1.7%
=====			
REVENUE TO EXPENSES	\$1.00 to \$0.15	\$1.00 to \$0.40	\$1.00 to \$1.14

RESIDENTIAL	
Taxable Value	\$12,753,914,927
Acreage	93,135
Parcel Count	217,454
COMMERCIAL	
Taxable Value	\$2,711,832,754
Acreage	19,433
Parcel Count	7,103
INDUSTRIAL	
Taxable Value	\$608,543,122
Acreage	7,470
Parcel Count	1,831
AGRICULTURE	
Taxable Value	\$614,102,655
Acreage	472,984
Parcel Count	13,035
MINING	
Taxable Value	\$146,124,026
Acreage	141,420
Parcel Count	3,625
VACANT	
Taxable Value	\$1,057,482,483
Acreage	30,819
Parcel Count	54,863
OPEN	
Taxable Value	\$365,936,170
Acreage	287,035
Parcel Count	44,620
OTHER	
Taxable Value	\$170,456,658
Acreage	109,151
Parcel Count	10,629
TOTAL	
Taxable Value	\$18,428,392,795
Acreage	1,161,446
Parcel Count	353,160

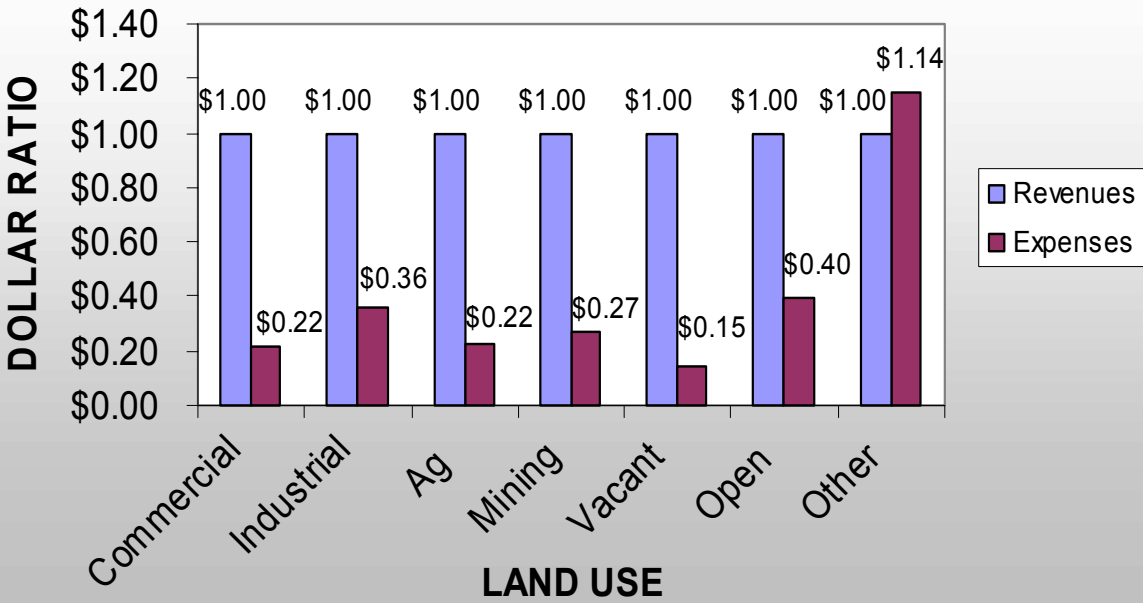
POLK COUNTY GOVERNMENT & SCHOOLS
DOLLAR VALUE OF REVENUES & EXPENSES IN MILLIONS



POLK COUNTY GOVERNMENT & SCHOOLS
PERCENTAGE OF REVENUES & EXPENSES GENERATED BY LAND USE



POLK COUNTY GOVERNMENT & SCHOOLS
RATIO OF EXPENSES TO EACH \$1 OF REVENUES



ENDNOTES

ENDNOTES

1. "2004 Tangible Personal Property Values by NAICS Code," prepared by C. Wayne Lambert, C.F.E., Director of Tangible Personal Property, Polk County Property Appraiser, Bartow, Florida.
2. All 18 volumes of Economic Census, published by the U.S. Department of Commerce, Bureau of the Census, and the one-volume Agriculture Census, published by the U.S. Department of Agriculture, must be used for this study. In all cases, the 2002 census volumes were used. The 18 volumes of the 2002 Economic Census, giving county-level data for Florida, were released just as this study was beginning.
3. The RIMS II multipliers for the Central Florida Region (DeSoto, Hardee, Highlands, Okeechobee and Polk counties) were supplied by Enterprise Florida, in Orlando. Economists in the Food and Resource Economics Department of the University of Florida are now using another source of multipliers known as IMPLAN, a software-based economic impact modeling system developed by Minnesota IMPLAN Group, Inc. (<http://www.implan.com>) that can construct a complete set of regional social accounts. This product is the outgrowth of work at the University of Minnesota that was started in 1984 by the company founders. The software was used by the U.S. Forest Service's Land Management Planning Unit in the early 1990s, then was rewritten and expanded to account for all industries and all transactions in a region. This version of the software became available in 1999 and is now in wide use by state and federal agencies and universities. The IMPLAN multipliers for Polk County were obtained for this study from Alan Hodges, an Economic Analyst in the Food and Resource Economics Department at the University of Florida. The IMPLAN multipliers would have resulted in more generous numbers for all sales, employment and payroll data that were analyzed in this study. However, the RIMS II multipliers were used in favor of the IMPLAN multipliers, so that comparisons could be made with the 1999 study, which used RIMS II multipliers.
4. David Mulkey and Rodney Clouser, "The Economic Impact of the Florida Sugar Industry" (Gainesville, Florida: Food and Resource Economics Department, University of Florida, November 1988), pp. 5-6.
5. The "on-tree value" of citrus production, calculated by variety using data from the *2002-03 Citrus Summary*, pp. 22-27, was \$135,169,060. This represents 47% of the county's total production value of \$284,787,000 reported in the *2002 Census of Agriculture*.
6. According to the Polk County Property Appraiser, the county has 18 different categories of food processors, of which two (NAICS categories 311411 and 311421) are related to fruit and vegetable preserving. The firms in this category, generated revenues of \$954,144,000, which represents 63.6% of the total output of \$1,500,062,000 for the

food processing industry, according to the *2002 Economic Census, Manufacturing, Florida*.

7. This is a very small portion of the total property tax revenues generated in Polk County. Because agricultural property taxes form such a small portion of the budget, it is easy to understand why agricultural issues are often overlooked by policy makers. On the other hand, since agriculture only contributes about 2.2% of total county and school revenues, yet occupies 52% of the county's land area, it is easy to see why many people mistakenly believe that agriculture is subsidized by other land uses. The tables and charts on pages 15-20 and 24-25, however, put these numbers in perspective.

8. The *Regional Economic Multiplier* used is for agricultural production and services combined. This multiplier is designed to avoid any double counting that might occur by combining the sales numbers together.

9. *2002 Economic Census, Manufacturing, Florida*, p. 83