

The Economic Impact of George E. Weems Memorial Hospital on Franklin County, Florida

National Center for Rural Health Works

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NATIONAL CENTER FOR
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Background - George E Weems Memorial Hospital, Franklin County, Florida

Franklin County was founded in 1832 and named after Benjamin Franklin.¹ The military briefly set up shop in Franklin County during the Second World War, using the county as a training site for jungle and amphibious warfare in the Pacific.²



From 2000 to 2010, Franklin County gained population at a slow rate, despite Florida's growing at a faster rate than the national average. Franklin County's growth rate has slowed since then, as has Florida and the U.S.'s population growth. Franklin is still growing slower than Florida and America as a whole. As of 2017, Franklin County's population was older than Florida's, having fewer people under the age of 20 but a greater percentage of its population over the age of 20. This is despite Florida being older than the US as a whole (**Appendix A**).

The population in Franklin is projected to surpass 12,000 by the 2020 census, and 12,500 by 2025. Florida's population is expected to grow much quicker, surpassing 23 million by the year 2025. Franklin's population is supposed to grow faster than the U.S. population is but slower than Florida's (**Appendix B**).



George E Weems Memorial Hospital is a not-for-profit, Critical Access Hospital in Franklin County, Florida. For a hospital to be designated as a Critical Access Hospital (CAH), it must be in a rural area (or certain urban areas), furnish 24/7 emergency services, have an average length of stay of less than four days, and not have more than 25 beds. One benefit of being a CAH is cost-based reimbursement from Medicare.³ George E. Weems Memorial has 25 hospital beds, and two rural health clinics in the nearby area that provide outpatient care for the community. Additionally, they provide ambulance service to the entire county with 5 ambulances through three sites (Eastpoint, Lanark and Apalachicola).

The hospital employs 114 staff which include: 4 advanced practice registered nurses, 1 physician assistant, 17 registered nurses, 11 Licensed Practical Nurses, 8 laboratory staff, 7 radiology technician staff, and 28 emergency medical services staff.

The hospital provides inpatient and emergency healthcare services along with radiology and laboratory services. 34% of its inpatient Medicare visits tackle medicine related issues, while 19% of visits see the pulmonology department, and 19% see the urology department. The average length of stay for Medicare inpatients is a little under three days.⁴

The George E. Weems Memorial Hospital was established in 1959, replacing a hospital established in 1948 made out of old Army barracks, which had 13 beds and an obstetrics unit and an Ultrasound Services. The Ultrasound Department has performed at least 172 ultrasounds since it was opened.

Economic Impact of George E Weems Memorial Hospital on Franklin County

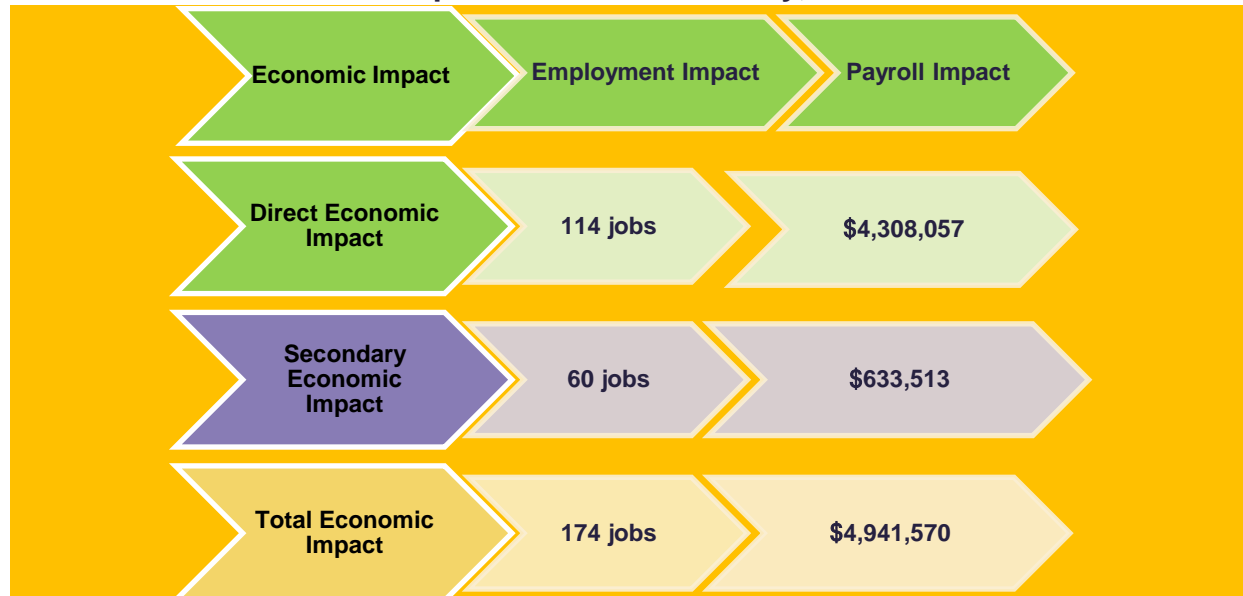


174 jobs locally created
Jobs Generated in Franklin due
to George E Weems Hospital



\$4.94 Million payroll locally created
Payroll Generated in Franklin due to
George E Weems Memorial Hospital

Figure 2: Total combined Economic Impact of George E Weems Memorial Hospital on Franklin County, Florida



Data Sources: Proposed staffing and budget data provided by George E. Weems Memorial Hospital; Multipliers generated by NCRHW using 2019 IMPLAN for Franklin County Florida

A rural hospital is often one of the largest providers of higher-skilled and higher wage employment in a rural community.⁵ Research from the National Center for Rural Health Works indicates that between 10 and 15 percent of the jobs in many rural counties are in the health sector.⁶ The overall economic activity of rural hospitals have major effects upon their local economies. George E Weems Memorial Hospital helps create 174 jobs and \$4.94 million of payroll in Franklin County.

The direct economic impact of rural hospitals includes construction, and operational expenses, such as wages, salaries, and benefits, medical supplies, and other hospital operational expenses. These activities create a "Ripple Effect" in the economy by increasing demand in other sectors due to employee's spending money in the local and state economy and through the continual purchase of supplies and services of the hospital, which is also known as the secondary economic impact.

We calculate the secondary impact utilizing an input-output models designed to analysis the transactions among the industries within the county including the direct, indirect and induced interrelated circular spending behaviors. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, input-output analysis gives expression to the general economic equilibrium system. (For more information, see **Appendix C**.) Franklin Hospital employees generated \$28,730 in sales taxes for the county. This was calculated by using total personal income for the county by the Bureau of Economic analysis, and data from the county budget on sales tax collections. Multiplying sales tax collections by hospital employee income, divided by personal income led to the total hospital collections.

Current Primary Care and Specialty Care Physician Demands, Supply and Shortages Facts

**Table 1: Franklin County Primary & Specialty
Physician Supply and Demand**

Physician Specialty	Supply	Demand	Shortage
OBGYN	1.0	3.3	2.3
Family Medicine	4.0	5.0	1.0
Internal Medicine	2.0	3.6	1.6
Dermatology	0.0	0.6	0.6
Ophthalmology	0.0	0.8	0.8
Cardiology	0.0	0.7	0.7
Orthopedic Surgery	0.0	0.9	0.9
Psychiatry	0.0	1.4	1.4
Pediatrics	0.0	1.3	1.3
Neurology	0.0	0.4	0.4
Urology	0.0	0.3	0.3
Otolaryngology (ENT)	0.0	0.4	0.4

Source: Rural Health Works Specialty Physician Demand Tool

Background

Considering the fact that all existing physician data sources (e.g. AMA Masterfile, the NPI, Healthgrades, etc.) use self-reported data as the basis of their data, our partner research center, the National Center for Analysis of Healthcare Data (NCAHD) created, in 2008, a unique process using the only regulated physician data source, state licensure data, as our base to which we integrate other data sources as needed. We call this our Enhanced State Licensure (ESL) dataset. Specialty and board certification along with practice site information can be provided at the individual data level or aggregates of specialist at the zip code, county, state, and service region.

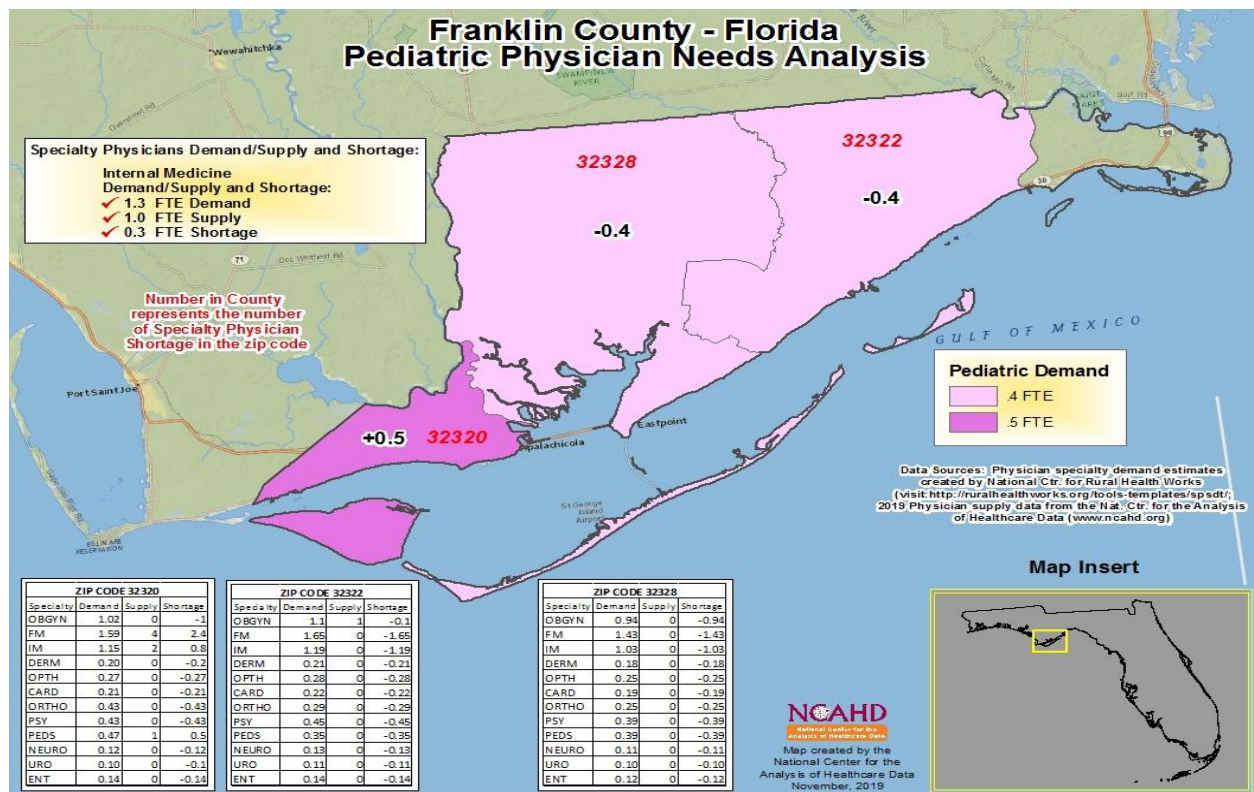
While most physician demand models estimate the number of doctors the total population can support, our model measures need based upon historical patient visit rates by different age demographics along with accounting for the current work production values by each physician specialty. Our methodology generates an FTE demand by any geographic area (zip code, county, state or service region) that when coupled with our specialty physician supply data provides a source of high-quality physician specialty information that will be updated annually.⁷

These processes were used to calculate the results displayed in Table 1. Using the nationally recognized definition for primary care (Family Medicine, General Internal Medicine and General Pediatrics) the community served by the George E Weems Memorial Hospital currently has a shortage of 3.9 FTE primary care physicians. Considering there are several nurse practitioners and a physician assistant that work within the hospital and the clinics, this shortage is positively influenced, but not to the degree of the needs. Also, our specialty physician needs model indicates a need for over eight other specialty physicians.

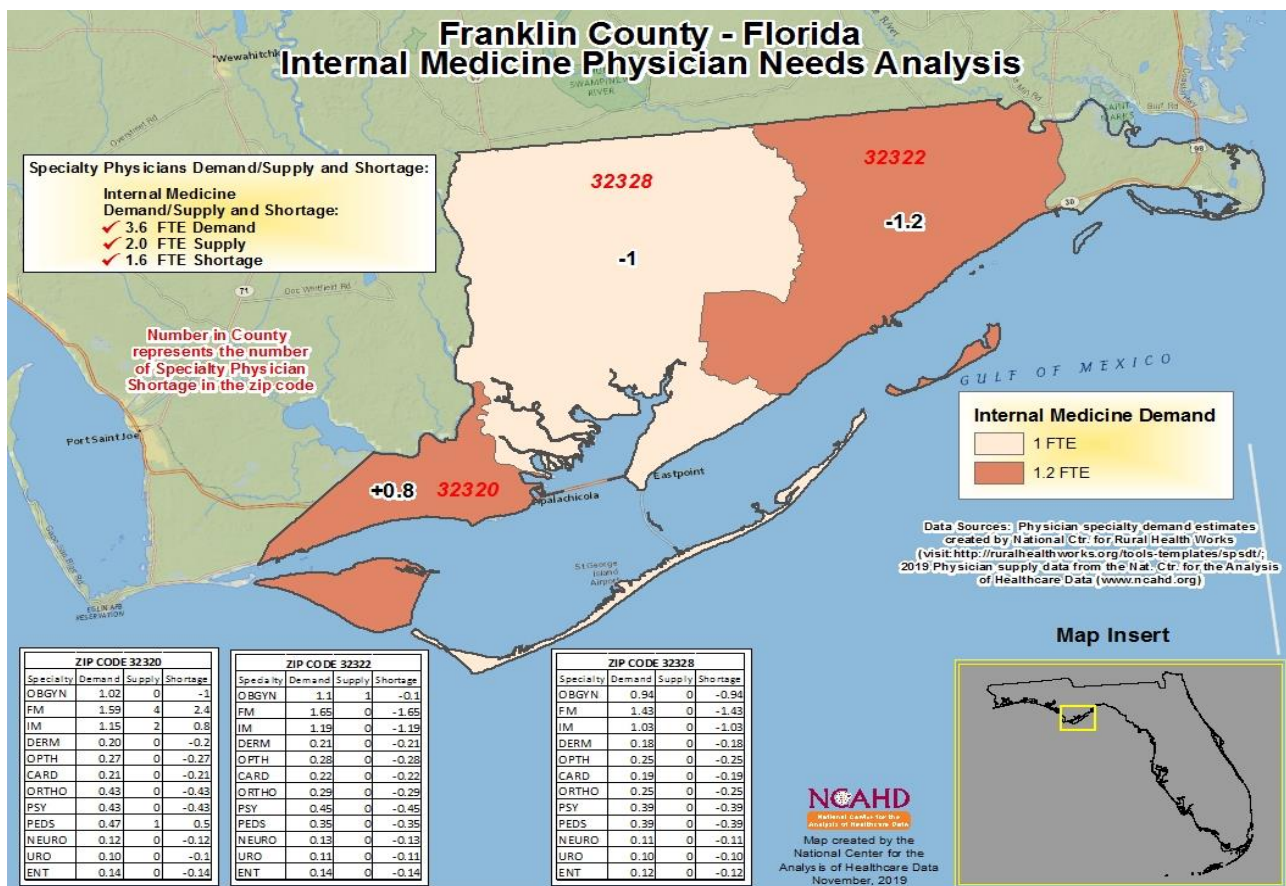
Based upon research completed in April, 2019 by NCRHW, the average rural primary care physician creates an estimated 23.3 local jobs and almost \$1.7 million in income from those jobs, which for Franklin County, with 6 primary care physicians equates to \$10.2 million in income (wages, salaries and benefits) and 139.8 FTE in jobs. In the map series below, the specialty physician demand is mapped with the number of shortage (-) or surplus (+) of the specialist in each of the zip codes indicated in bold black text. **(See maps 1-4 below)**

References

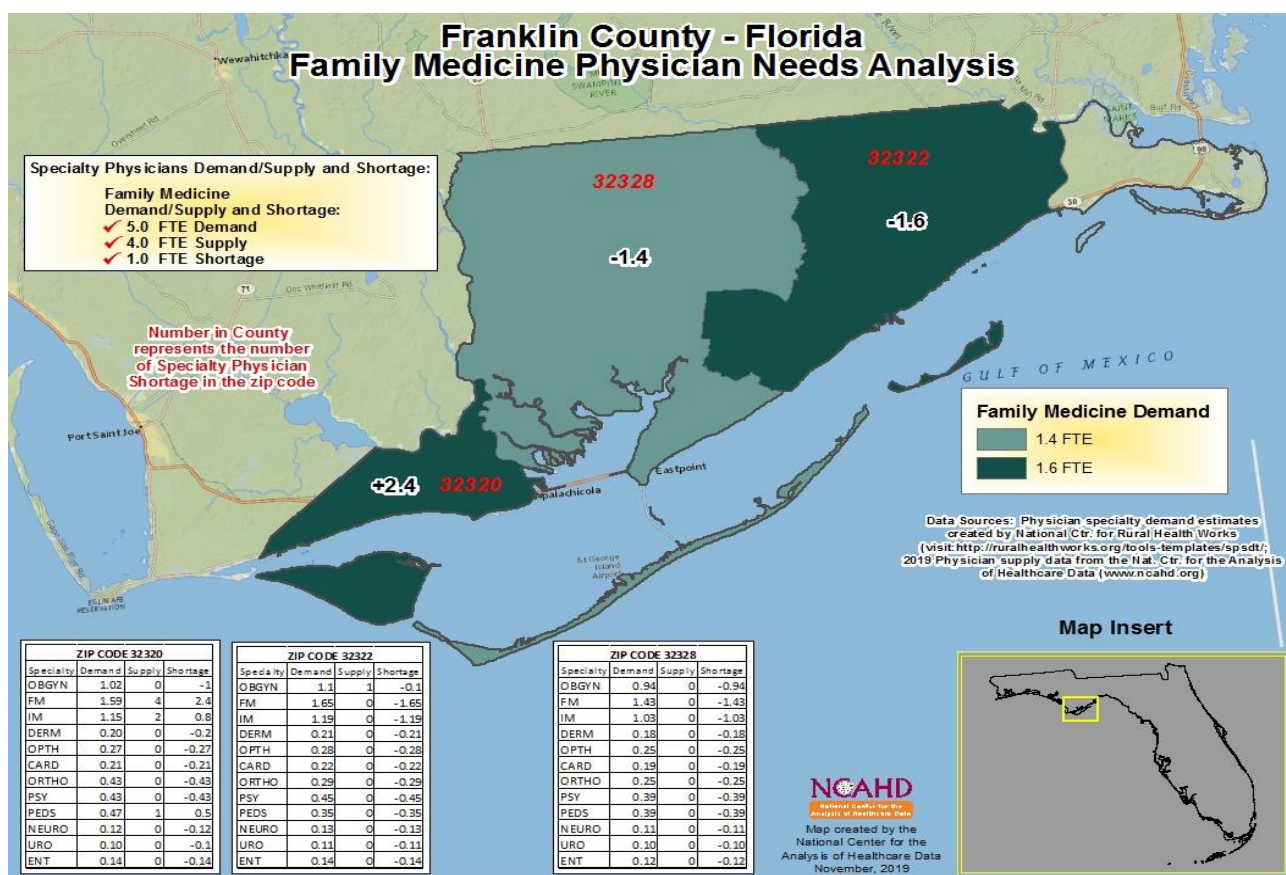
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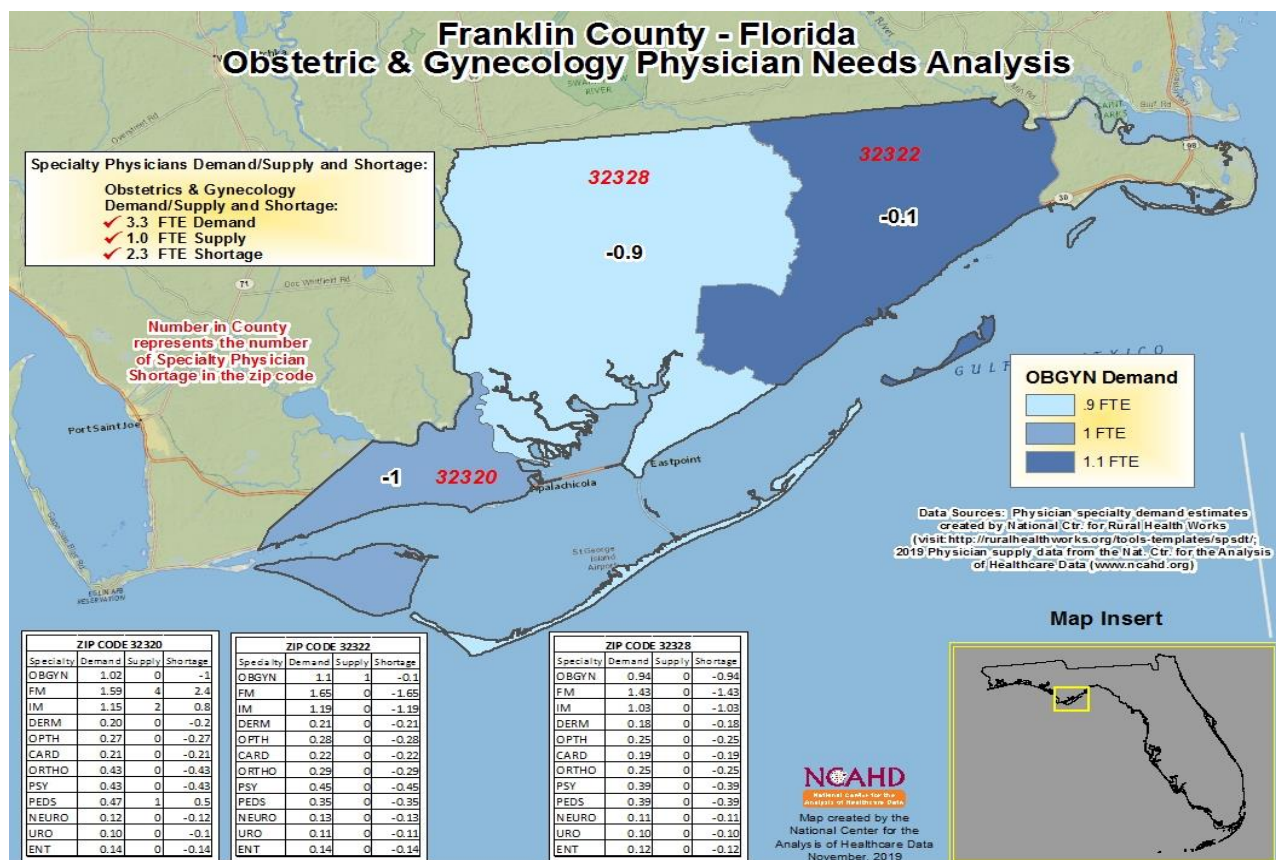
Map 1 - Pediatric Physician Needs Analysis



Map 2 - Internal Medicine Specialty Needs Analysis



Map 3 - Family Medicine Specialty Needs Analysis



Map 4 - Obstetrics & Gynecology Needs Analysis

Appendix A - Population by Age of Franklin County								
the State of Florida and the United States from 2000 - 2017								
FRANKLIN			FLORIDA			USA		
2000	Population	%	2000	Population	%	2000	Population	%
< 20 years	2,218	20.1	< 20 years	4,048,632	25.3	< 20 years	80,473,265	28.6
20-34	2,165	19.5	20-34	3,012,410	18.8	20-34	58,855,725	20.9
35-44	1,856	16.8	35-44	2,485,247	15.5	35-44	45,148,527	16.0
45-54	1,602	14.5	45-54	2,069,479	12.9	45-54	37,677,952	13.4
55-64	1,475	13.3	55-64	1,559,013	9.7	55-64	24,274,684	8.6
65+	1,741	15.7	65+	2,807,597	17.6	65+	34,991,753	12.4
Total population	11,057	100.0	Total population	15,982,378	100.0	Total population	281,421,906	100.0
2010	Population	%	2010	Population	%	2010	Population	%
< 20 years	2,171	18.8	< 20 years	4,512,990	23.9	< 20 years	83,267,556	26.9
20-34	2,491	21.5	20-34	3,518,303	18.7	20-34	62,649,947	20.3
35-44	1,486	12.9	35-44	2,431,254	13.0	35-44	41,070,606	13.3
45-54	1,716	14.8	45-54	2,741,493	14.6	45-54	45,006,716	14.6
55-64	1,670	14.5	55-64	2,337,668	12.4	55-64	36,482,729	11.8
65+	2,015	17.4	65+	3,259,602	17.3	65+	40,267,984	13.1
Total population	11,549	100.0	Total population	18,801,310	100.0	Total population	308,745,538	100.0
2017 est.	Population	%	2017 est.	Population	%	2017 est.	Population	%
< 20 years	2,014	17.3	< 20 years	4,586,563	22.7	< 20 years	82,230,798	25.6
20-34	2,591	22.2	20-34	3,898,385	19.2	20-34	66,546,138	20.7
35-44	1,352	11.6	35-44	2,465,145	12.2	35-44	40,656,419	12.7
45-54	1,563	13.4	45-54	2,752,893	13.6	45-54	43,091,143	13.4
55-64	1,739	14.9	55-64	2,648,572	13.1	55-64	40,747,520	12.7
65+	2,416	20.7	65+	3,926,889	19.4	65+	47,732,389	14.9
Total population	11,675	100.0	Total population	20,278,447	100.0	Total population	321,004,407	100.0

Appendix B - Population by Age of Franklin County								
the State of Florida and the United States from 2010 - 2025								
FRANKLIN			FLORIDA			USA		
2010	Population	%	2010	Population	%	2010	Population	%
< 20 years	2,171	18.8	< 20 years	4,512,990	23.9	< 20 years	80,473,265	28.6
20-34	2,491	21.5	20-34	3,518,303	18.7	20-34	58,855,725	20.9
35-44	1,486	12.9	35-44	2,431,254	13.0	35-44	45,148,527	16.0
45-54	1,716	14.8	45-54	2,741,493	14.6	45-54	37,677,952	13.4
55-64	1,670	14.5	55-64	2,337,668	12.4	55-64	24,274,684	8.6
65+	2,015	17.4	65+	3,259,602	17.3	65+	34,991,753	12.4
Total population	11,549	100.0	Total population	18,801,310	100.0	Total population	281,421,906	100.0
2020 proj.	Population	%	2020 proj.	Population	%	2020 proj.	Population	%
< 20 years	2,300	19.0	< 20 years	4,875,642	22.5	< 20 years	83,267,556	26.9
20-34	2,320	19.1	20-34	4,094,894	19.0	20-34	62,649,947	20.3
35-44	1,568	12.9	35-44	2,580,066	12.0	35-44	41,070,606	13.3
45-54	1,492	12.3	45-54	2,600,644	12.1	45-54	45,006,716	14.6
55-64	1,739	14.3	55-64	2,968,453	13.8	55-64	36,482,729	11.8
65+	2,704	22.3	65+	4,397,911	20.4	65+	40,267,984	13.1
Total population	12,123	100.0	Total population	21,517,610	100.0	Total population	308,745,538	100.0
2025 proj.	Population	%	2025 proj.	Population	%	2025 proj.	Population	%
< 20 years	2,444	19.3	< 20 years	5,189,932	22.5	< 20 years	82,230,798	25.6
20-34	2,361	18.6	20-34	4,267,405	18.5	20-34	66,546,138	20.7
35-44	1,600	12.6	35-44	2,868,052	12.4	35-44	40,656,419	12.7
45-54	1,565	12.3	45-54	2,588,331	11.2	45-54	43,091,143	13.4
55-64	1,677	13.2	55-64	2,972,216	12.9	55-64	40,747,520	12.7
65+	3,026	23.9	65+	5,164,884	22.4	65+	47,732,389	14.9
Total population	12,673	100.0	Total population	23,050,820	100.0	Total population	321,004,407	100.0

Appendix C - IMPLAN Software and Data

Model and Data Used to Derive Multipliers

A Review of Input-Output Analysis

Input-output (I/O) (Miernyk, 1965) was designed to analyze the transactions among the industries in an economy. These models are largely based on the work of Wassily Leontief (1936). Detailed I/O analysis captures the indirect and induced interrelated circular behavior of the economy. For example, an increase in the demand for health services requires more equipment, more labor, and more supplies, which, in turn, requires more labor to produce the supplies, etc. By simultaneously accounting for structural interaction between sectors and industries, I/O analysis gives expression to the general economic equilibrium system. The analysis utilizes assumptions based on linear and fixed coefficients and limited substitutions among inputs and outputs. The analysis also assumes that average and marginal I/O coefficients are equal.

Nonetheless, the framework has been widely accepted and used. I/O analysis is useful when carefully executed and interpreted in defining the structure of an area, the interdependencies among industries, and forecasting economic outcomes.

The I/O model coefficients describe the structural interdependence of an economy. From the coefficients, various predictive devices can be computed, which can be useful in analyzing economic changes in a state, an area or a county. Multipliers indicate the relationship between some observed change in the economy and the total change in economic activity created throughout the economy.

- The basis of IMPLAN was developed by the U. S. Forest Service to construct input/output accounts and models. The complexity of this type of modeling had hindered practitioners from constructing models specific to a community requesting an analysis. The University of Minnesota utilized the U.S. Forest Service model to further develop the methodology and expand the data sources to form the model known as IMPLAN. The founders of IMPLAN, Scott Lindall and Doug Olson, joined the University of Minnesota in 1984 and, as an outgrowth of their work with the University of Minnesota, entered into a technology transfer agreement with the University of Minnesota that allowed them to form Minnesota IMPLAN Group, Inc. (MIG).

IMPLAN Software and Data

At first, IMPLAN focused on database development and provided data that could be used in the Forest Service version of the software. In 1995, IMPLAN took on the task of writing a new version of the IMPLAN software from scratch that extended the previous Forest Service version by creating an entirely new modeling system – an extension of input-output accounts and resulting Social Accounting Matrices (SAM) multipliers. Version 2 of the new IMPLAN software became available in May of 1999. The latest development of the software is now available, IMPLAN Version 3 Software System, the new economic impact assessment software system.

With IMPLAN Version 3 software, the packaging of products has changed. Version 3 utilizes 2007 or later data. When data are ordered, the data cost plus shipping are the only costs. Version 3.0 software and the new IMPLAN appliance are included in the cost of the data. There are no additional fees to upgrade to IMPLAN

Version 3.0. Data files are licensed to an individual user. Version 2 is no longer compatible with 2008 and later data sets.

Version 3 allows the user to do much more detailed analyses. Users can continue to create detailed economic impact estimates. Version 3.0 takes the analysis further, providing a new method for estimating regional imports and exports is being implemented - a trade model. IMPLAN can construct a model for any state, region, area, county, or zip code area in the United States by using available national, state, county, and zip code level data. Impact analysis can be performed once a regional input/output model is constructed.

IMPLAN Multipliers

Five different sets of multipliers are estimated by IMPLAN, corresponding to five measures of regional economic activity. These are: total industry output, personal income, total income, value added, and employment. Two types of multipliers are generated. Type I multipliers measure the impact in terms of direct and indirect effects. Direct impacts are the changes in the activities of the focus industry or firm, such as the closing of a hospital. The focus business changes its purchases of inputs as a result of the direct impacts. This produces indirect impacts in other business sectors. However, the total impact of a change in the economy consists of direct, indirect, and induced changes. Both the direct and indirect impacts change the flow of dollars to the households. Subsequently, the households alter their consumption accordingly. The effect of the changes in household consumption on businesses in a community is referred to as an induced effect. To measure the total impact, a Type II (or Type SAM) multiplier is used. The Type II multiplier compares direct, indirect, and induced effects with the direct effects generated by a change in final demand (the sum of direct, indirect, and induced divided by direct).