EAST CENTRAL FLORIDA CEDS

BREVARD
LAKE
MARION
ORANGE
OSCEOLA
SEMINOLE
SUMTER
VOLUSIA

2022

THIS REPORT WAS PREPARED BY THE EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL UNDER AWARD NUMBER ED17ATL3020006 | FROM THE U.S. ECONOMIC DEVELOPMENT ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

ABOUT THE EAST CENTRAL FLORDIA REGIONAL PLANNING COUNCIL (ECFRPC)

Established in 1962 as an area-wide association of local governments, the ECFRPC is one of Florida's ten regional planning councils. Council staff provides technical assistance in the areas of land use and environmental planning, emergency preparedness, geographic information systems (GIS), health, housing, urban design, transportation and economic and fiscal analysis among others. Because of the ECFRPC, member governments have received more than $13.8 million in federal and state grants since 2011. This represents a return on investment of $3.59 for every dollar paid in assessments.

The ECFRPC is currently designated by the U.S Economic Development Administration as the region's Economic Development District (EDD). The EDD program provides economic technical assistance to public and private organizations within the eight-county region. This includes performing economic impact analyses using the REMI model, developing economic strategic plans, and assisting with grant applications.

For more information about ECFRPC programs, visit the organization's website at www.ecfrpc.org.

Serving Brevard, Lake, Marion, Orange, Osceola, Seminole, Sumter, and Volusia Counties

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2022 CEDS: TOWARDS A RESILIENT REGION

The East Central Florida Economic Development District (EDD) is a partnership between the U.S. Economic Development Administration and the East Central Florida Regional Planning Council. Through this program communities and organizations located within the Council's 8-county region can access federal monies to fund a variety of economic development projects. EDD staff also provides a variety of economic technical assistance services to the community including assistance with grant applications, development of economic strategic plans, and economic impact analysis.

One of the responsibilities of the EDD is to develop and implement the region's Comprehensive Economic Development Strategy (CEDS). This is a strategy-driven plan that strives to create a region capable of withstanding and recovering quickly from major economic and natural disasters. Resiliency can be achieved when regional leaders focus their efforts on improving the area's people, economic, and place based assets and address their weaknesses through a variety of efforts. These include developing the region's workforce, fostering innovation and economic competitiveness, harnessing its infrastructure and place-based assets, and promoting collaboration among the different stakeholders.

Finally, the CEDS is developed with the assistance of a Strategy Committee comprised of members from the private and public sectors including economic development organizations, workforce development agencies, local governments, business leaders, higher education institutions, and private individuals. The Council's governing board of elected and appointed officials is also an important part of this process.

CEDS FRAMEWORK

People

Places

Prosperity

CEDS Strategy Committee Meetings

PEOPLE

WALL ST., ORLANDO, FLORIDA | IMAGE: ORLANDO WEEKLY

The People Pillar addresses the general needs of the population, workforce, and local organizations to help foster social cohesion, inclusiveness, and community welfare.

PEOPLE

Regional Population Trends

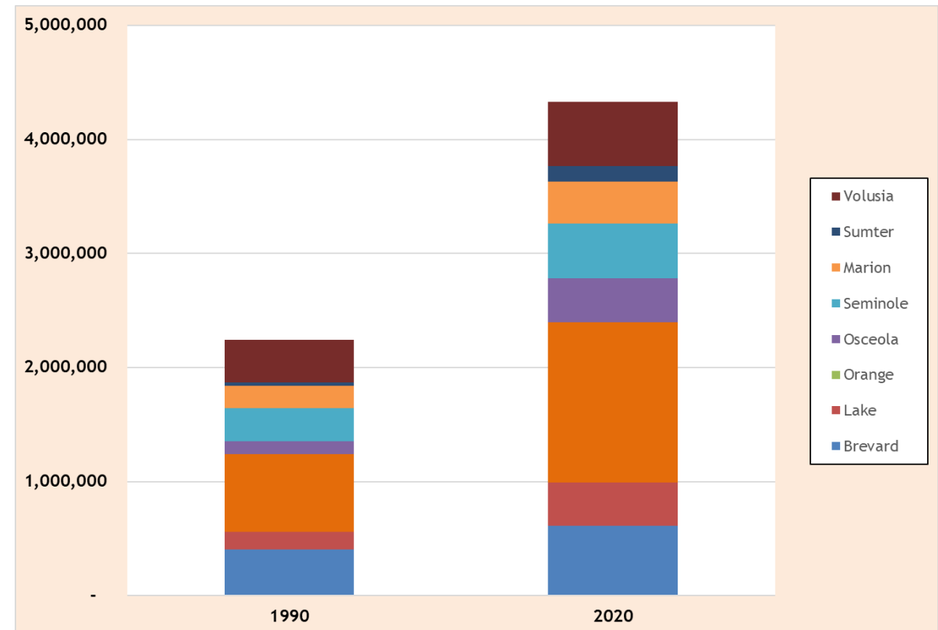
Population growth is one of the biggest drivers of economic growth in East Central Florida. The region added more than 1.8 million residents between 1995 and 2020 (REMI). This represents an 81% growth rate over this twenty-five-year period. New residents generate demand for new homes, commercial spaces, and other amenities.

While population growth occurred across the region, it was more prevalent within the Metro Orlando region (Orange, Lake, Osceola, and Seminole counties). In 1990, about 59% of the region's residents lived within these counties. Now the Metro Orlando region comprises just over 61 % of East Central Florida's population. This is probably due to the high number of jobs available in Orange County, the region's primary county. The effects of this employment surge spilled over to nearby Lake and Osceola counties as people looked for a cheaper place to live. On the other hand, the coastal counties share of population decreased 8% during this time period. This could be because these counties generally tend to attract more retirees.

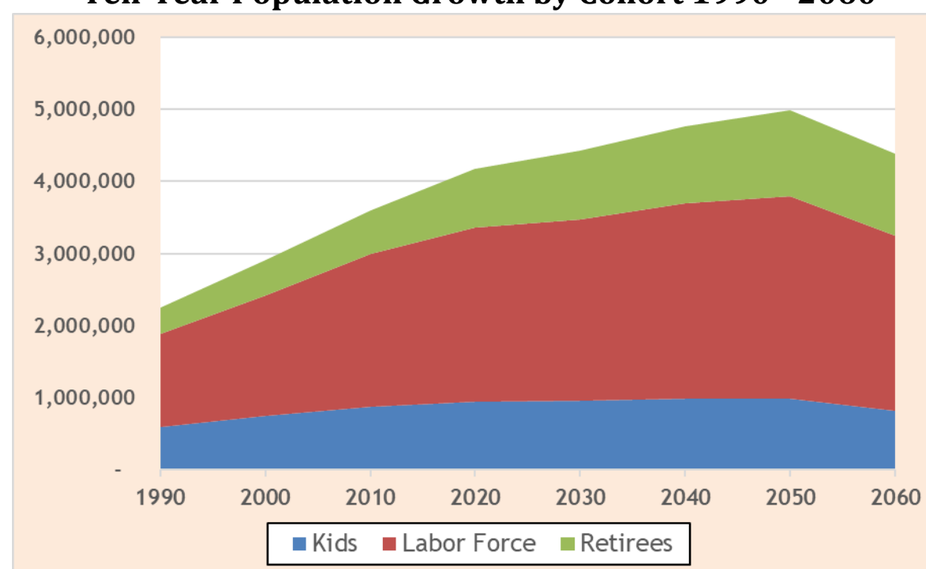
According to REMI's forecast, population growth is expected to continue over the next 25 years. However, the rate of growth will continue to decrease. This trend is a reflection of the nation's aging population and declining birth rates. According to the REMI forecast, Brevard, Lake, Sumter, and Orange counties are expected to have population growth rates lower than the rest of the region. On the other hand, Osceola, Seminole, and Volusia counties are expected to experience higher population growth rates.

For the purpose of this analysis, the ECFRPC divided the population into three main cohorts: kids (17 and under), labor force (19-64), and retirees (65 and over). Within the next thirty years, the share of kids is expected to decline about one percent per decade. The working age population will stay relatively steady. On the other hand, the share of retirees will increase by one percent every decade.

Regional Population Share by County 1990 and 2020



Ten-Year Population Growth by Cohort 1990 - 2060



Source: REMI Model Version 3.0

Population Change Components

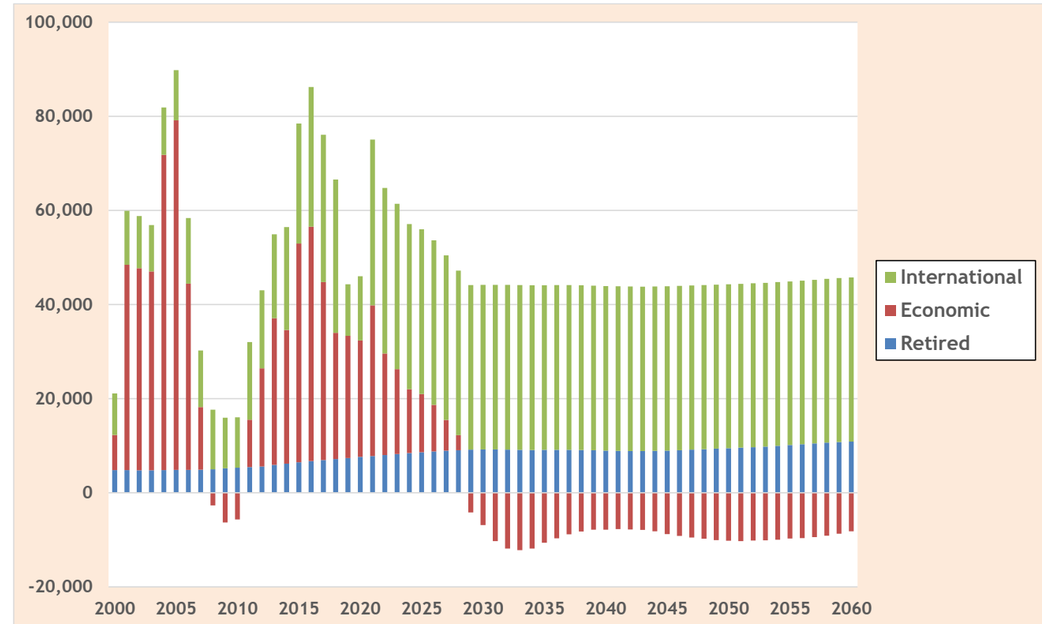
Population growth is measured as the increase in the number of individuals based on natural growth (difference between births and deaths) and migration (number of individuals coming from other regions). In the case of East Central Florida, migration has surpassed natural growth as the main driver of population change since the 1990s. According to REMI, the region received an average of 52,000 migrants each year since 2001.

The REMI model classfies migrants into three subcategories: economic, retirees, and international. Economic migrants include all people under the age of 65 coming from other parts of the nation based on economic or amenity factors. Retirees are domestic migrants over 65 who decide to relocate permanently in East Central Florida. Finally, the international migrants subcategory includes people moving here from other parts of the world.

According to REMI data, the flow of migrants from each of these groups has varied through the years. During the 1990s, domestic economic migrants was the dominant subgroup. This trend started to change in the 2010s, when international migration started to outpace domestic migration, especially during the economic recession when the overall number of migrants dropped precipitously. REMI forecasts that international migrants will continue to be the largest group during the next forty years. On the other hand, the number of economic migrants will trend negative starting in the 2030s. Meanwhile, retirees will continue to comprise about 30% of all new residents.

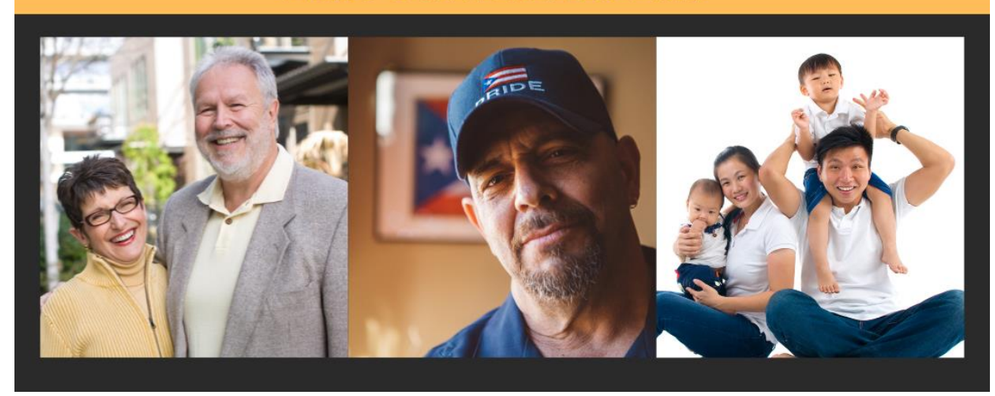
Overall, migrants help to enrich East Central Florida's economic and community well-being. They help to augment the available workforce and bring new skills and life experiences that contributes to the overall business environment. The main challenge for East Central Florida will be to identify ways in which these migrants can be best integrated into the community's fabric. Moreover, it is important to acknowledge that some members of these migrant populations will also require specialized services. This includes creating programs that help international and domestic migrants coming from Puerto Rico to increase their English fluency. In the case of retirees, it would identify how these residents can best contribute their talents and skills to the community.

East Central Florida's Migrant Population 2001-2060



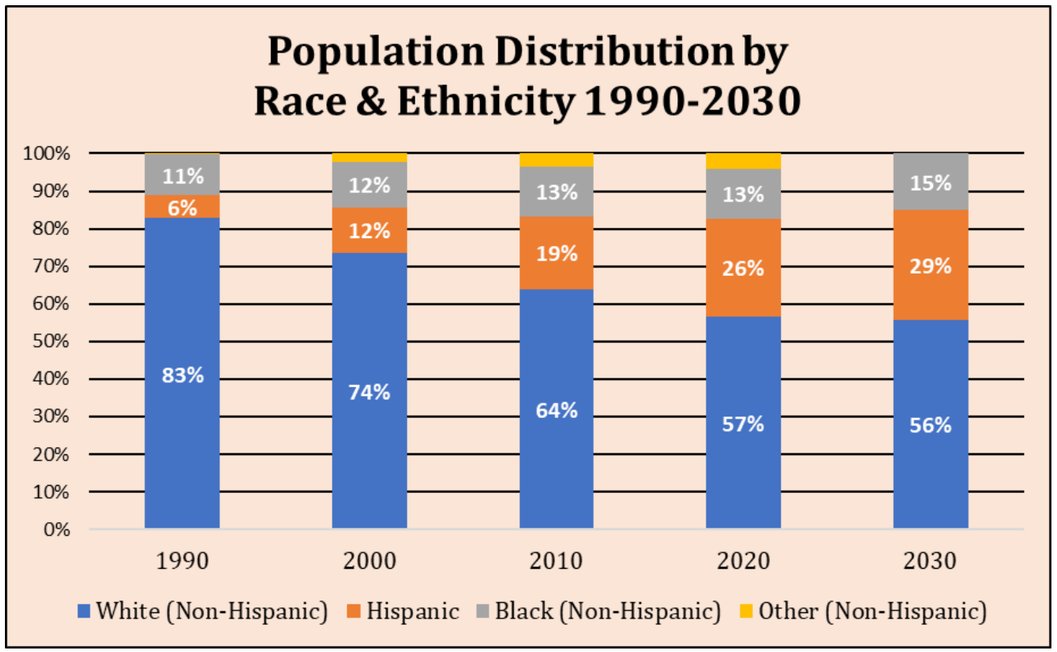
Source: REMI v3.00

Type of Migrants Relocating to East Central Florida

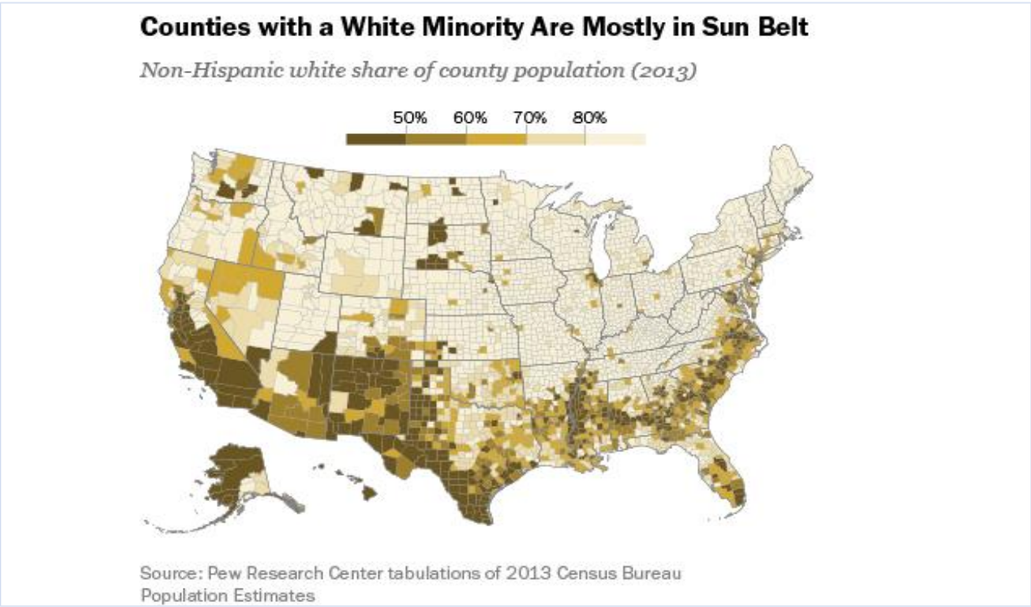


The Rise of Minority-Majority Counties

According to the Pew Research Center, the nation's white share of the population is currently declining as Hispanic, Asian, and black populations continue to grow. This demographic shift is not occurring uniformly, but is mainly concentrated in urban counties located in the Sun Belt. Seventy-eight counties in 19 states have turned into majority-minority counties where no single racial or ethnic group is predominant. Four of these counties are located in Florida, and two within the East Central Florida region. Orange and Osceola Counties have experienced steady increases in Hispanic populations, so much so that Orange and Osceola Counties became less than 50% white in 2006 and 2005, respectively. Osceola County is experiencing an especially heavy migration of Hispanic people, principally from Puerto Rico. According to REMI forecasting software, this population trend is expected to continue. This demographic trend is not just a Hispanic phenomenon. Since 1990, the percentage of white, non-Hispanic residents in Orange and Osceola Counties has steadily declined, and is projected to continue. Furthermore, Orange County has experienced an influx of other non-Hispanic residents, a trend also expected to continue.



Sources: mySidewalk, U.S. Census 2020



PEOPLE

Labor Force Characteristics

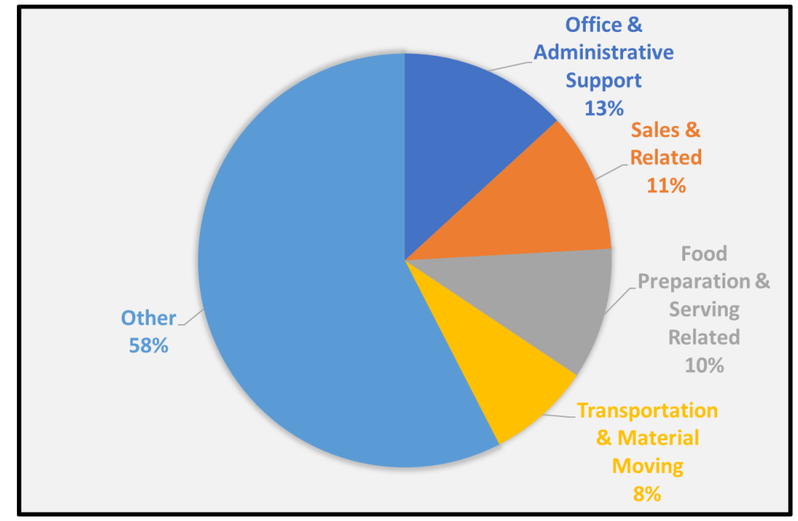
Human capital-defined as the skills, education, knowledge, and aptitudes of the workforce- is probably the most important resource that any region has available to attract new industries and investments. There are several factors that need to be examined when assessing the quality of the region's labor supply including labor force participation trends, the region's occupational mix, labor force quality, and labor costs.

Analyzing East Central Florida's Occupational Mix

The occupational composition of the region's workforce can help assess the quality of the regional labor force. For this analysis, the ECFRPC used data from the JobsEQ for the 4th quarter of 2021. This information is organized based on the 2010 Standard Occupational Classification (SOC) system, which classifies occupations into particular groups according to the work and the tasks performed by the employee. According to JobsEQ, 34% of East Central Florida workers belong to three major occupational groups. The largest group is Office and Administrative Support, which includes occupations that focus on customer service, and desktop publishing, among other clerical duties. Sales and Related Occupations include professions that sell a variety of goods and services to the public including real estate, insurance, and other retail products. Finally, the Food Preparation and Serving Occupations include cooks, waiters/waitresses, bartenders, and other similar careers. A common denominator between all these occupational groups is that these careers require little or no formal education.

For the purpose of this discussion, the ECFRPC conducted an analysis to determine location quotients for the region. This methodology compares the percentage of regional workers within a particular occupation to the national percentage. It helps to provide a more accurate picture of the region's occupational mix. Two occupational groups show a high concentration of workers: Personal Care & Services and Construction & Extraction. These occupations provide a variety of services, especially related to tourism. Several other high LQ occupations in the region that belong to other occupational groups also serve the tourism industry, such as Travel Agents and Hotel Desk Clerks. Construction occupations assist in the building and development of commercial and residential buildings. Fiberglass Laminators are a Production occupation with a high concentration in the region

East Central Florida's Occupational Mix by Major Occupational Group



Occupations with Highest Location Quotient in East Central Florida

DETAILED OCCUPATION	OCCUPATIONAL GROUP	LQ
Travel Agents	Sales and Related	4.65
Amusement and Recreation Attendants	Personal Care & Service	4.50
Fiberglass Laminators and Fabricators	Production	3.73
Costume Attendants	Personal Care & Service	3.67
Concierges	Personal Care & Service	3.03
Baggage Porters and Bellhops	Personal Care & Service	2.81
Helpers--Roofers	Construction & Extraction	2.80
Roofers	Construction & Extraction	2.66
Hotel, Motel, and Resort Desk Clerks	Office & Administrative Support	2.58
Travel Guides	Personal Care & Service	2.57
Fire Inspectors and Investigators	Protective Service	2.50
Entertainers and Performers, Sports and Related Workers, All Other	Arts, Design, Entertainment, Sports, & Media	2.49
Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	Protective Service	2.36
Lodging Managers	Management	2.30
Disc Jockeys, Except Radio	Arts, Design, Entertainment, Sports, & Media	2.29

JobsEQ, 2021 Q4

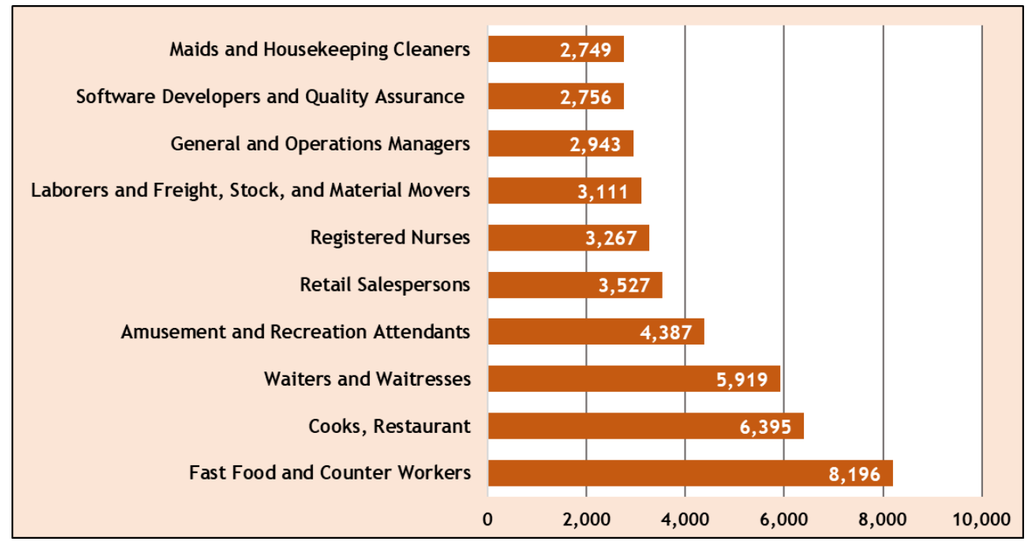
Labor Force Trends

Occupational trends and patterns can help illuminate the discussion about the future of East Central Florida's labor market and reveal where the regional economy is heading. Currently, JobsEQ has projected job growth by occupation from 2022-2027 utilizing annual growth rates. In East Central Florida, the occupation with the highest projected numerical growth potential is Fast Food and Counter Workers. It is projected to add over 8,000 jobs within the next five years. People within this occupation sell various types of fast-food products to consumers. Other dominant occupations include Restaurant Cooks (6,395), Waiter and Waitresses (5,919), Amusement and Recreation Attendants (4,387), and Retail Salespersons (3,527).

An important finding from looking at the top ten occupations with the highest projected numerical growth is that this group is dominated by professions within the Food Preparation and Serving occupational group. Personal Care & Service, Building and Grounds Cleaning & Maintenance, and Sales are other occupational groups represented. Based on this information, it could be affirmed that the region's economy will continue to be driven by the service economy in the near future. Moreover, most of these occupations are low-wage jobs with a median annual pay of less than $35,000. The only exceptions are Software Developers ($94,600), Registered Nurses ($67,200), and General & Operations Managers ($85,200).

Another way of analyzing labor force trends is by looking at the percentage change in occupational employment. This methodology better depicts the changes that are expected to occur in the region's occupational mix. Professions within the Personal Care & Service and Food Preparation & Serving occupational groups are expected to comprise 5 of the 15 fastest-growing occupations each in the next 5 years. This is part of a national trend that has seen an increase in the prevalence of service industry jobs. Other high-paying occupations with rapid projected growth include Nurse Practitioners ($109,00), Physician Assistants ($121,800), Information Security Analysts ($98,800), and Medical & Health Services Managers ($93,100). However, these occupations are a minority of projected positions added.

Occupations with Highest Projected Job Growth 2022-2027 (Numerical)



Occupations with Highest Projected Job Growth 2022-2027 (Percentage)

OCCUPATION	# GROWTH	% CHANGE
Ushers, Lobby Attendants, and Ticket Takers	466	32%
Nurse Practitioners	878	31%
Amusement and Recreation Attendants	4,387	28%
Cooks, Restaurant	6,395	27%
Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	856	26%
Exercise Trainers and Group Fitness Instructors	898	23%
Food Preparation and Serving Related Workers, All Other	330	23%
Animal Caretakers	859	22%
Chefs and Head Cooks	616	22%
First-Line Supervisors of Personal Service and Entertainment and Recreation Workers, Except Gambling Services	728	21%
Physician Assistants	339	21%
Information Security Analysts	318	21%
Medical and Health Services Managers	1,013	20%
Bartenders	1,880	20%
Dining Room and Cafeteria Attendants and Bartender Helpers	1,708	20%

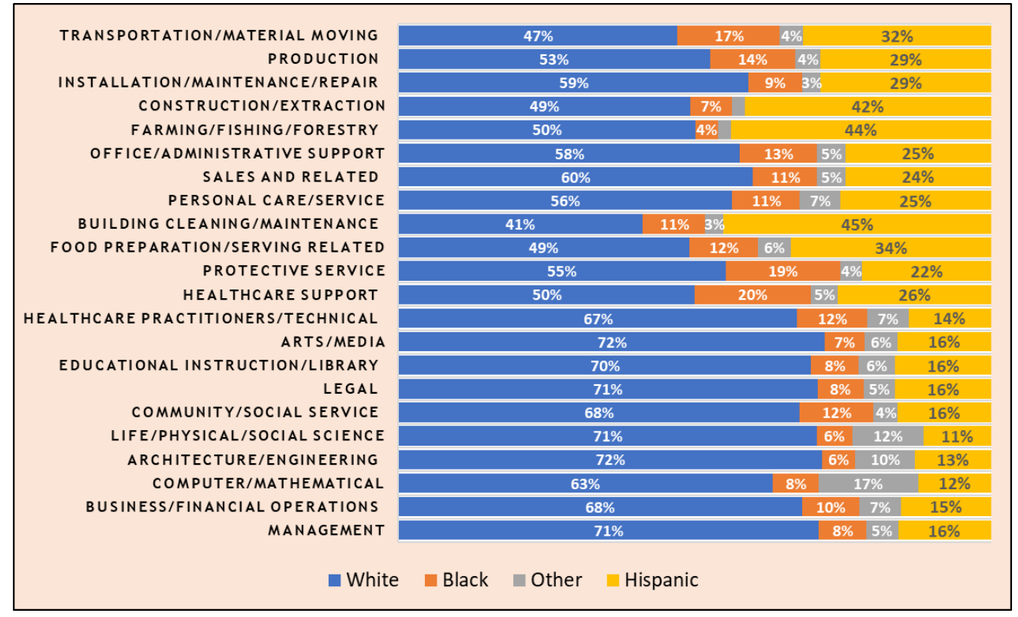
JobsEQ, 2021 Q4

Demographics & Occupation

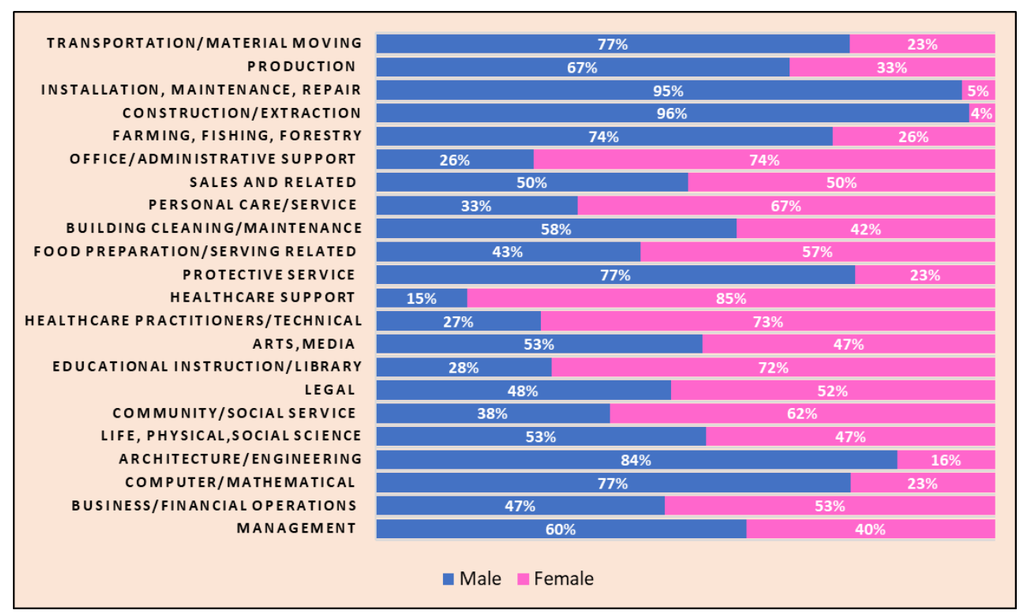
The distribution of race, ethnicity, and gender can reveal important information about occupational groups and the people that hold these occupations. When examining race and ethnicity, several patterns can be identified. As of the 2020 Census, 57% of the 8-county region population is Non-Hispanic White. However, there are several occupational groups where the proportion of Non-Hispanic Whites is higher. In Management, Architecture/Engineering, Life/Physical/Social Science, Educational Instruction/Library, and Arts/Media, Non-Hispanic Whites comprise more than 70% of the total workforce. As a result, Hispanic and Non-Hispanic Black groups are underrepresented in these occupational groups as well. These occupational groups also generally require higher levels of educational attainment while also paying higher wages. For Non-Hispanic Black groups, the occupational groups that exceed their representation in the 2020 Census (13%) are Transportation/Material Moving, Production, Protective Services, and Healthcare Support. These occupational groups are generally paid less in their industry and have fewer educational requirements overall. Hispanic groups comprise 26% of the region's population according to the 2020 Census. Occupational groups that have an overrepresentation of Hispanics compared to the overall population include Transportation/Material Moving, Farming/Fishing/Forestry, Construction/Extraction, Building Cleaning/Maintenance, and Food Preparation/Serving Related. These occupational groups also have fewer educational requirements. These differences in racial & ethnic makeup of occupational groups point to the type of employment most accessible to various groups.

Gender is another variable that can vary widely between occupational groups. For example, males comprise over 70% of the workforce in Transportation/Material Moving, Installation/ Maintenance/ Repair, Construction/ Extraction, Farming/Fishing/Forestry, Protective Service, Architecture/Engineering, and Computer/Mathematical. On the other hand, females comprise over 70% of Office/Administrative Support, Healthcare Support, Healthcare Practitioners, and Educational Instruction. These differences can be explained by a variety of reasons, which include physical demands, educational requirements, time away from family, and societal expectations of gender.

Race and Ethnicity and Occupation



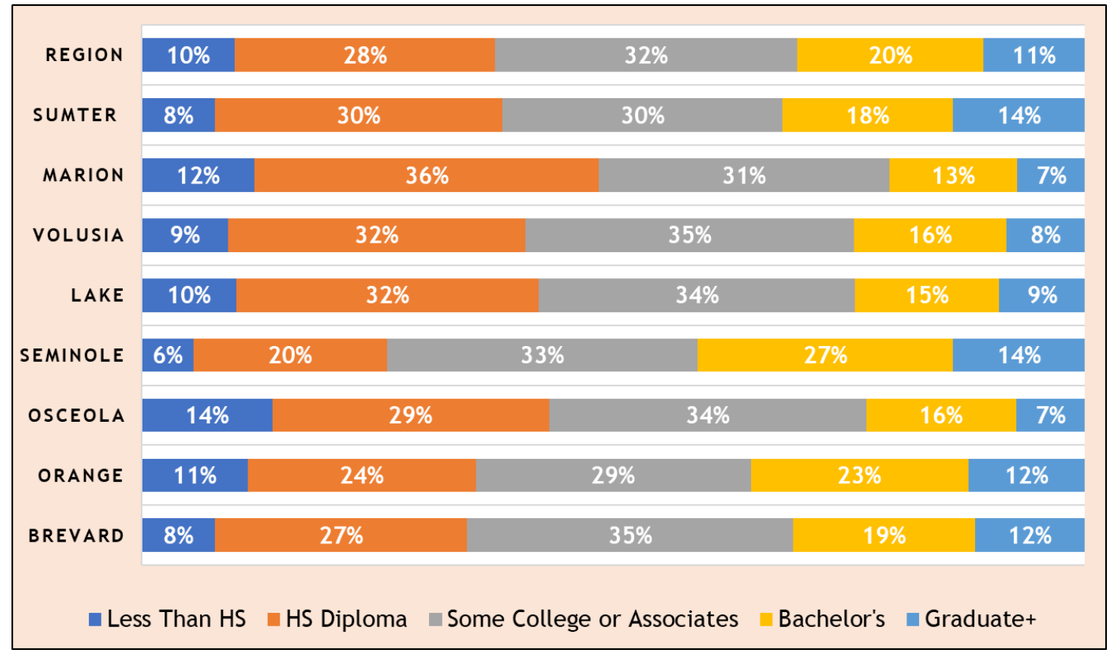
Gender and Occupation



Educational Attainment

An educated workforce is considered an important factor when attracting new industries to the region. Based on information from the American Community Survey, East Central Florida's workforce has a relatively high level of education. Over 60% of all residents aged 25 or older have some level of education beyond a high school diploma. Seminole, Brevard, and Orange counties are home to the most educated workforces within the region. As will be discussed later in the document, these counties are also home to several of the region's high-tech industries. Overall, East Central Florida has a similar level of educational attainment compared to both the state of Florida and the nation.

Educational Attainment by County, Ages 25+



ACS, 2016-2020

Measuring East Central Florida's Workforce

EDA's Innovation Index to compares the performance of the nation's 384 economic development districts in four component areas. One of these areas is referred to as the Human Capital and Knowledge Creation Index. It measures the degree to which a county's labor force is able to engage in innovative activities. This category is comprised of the following measurement areas:

- **Annual Average Growth Rate for Population Ages 25 to 44**: People within this age range are considered to be less risk averse and more entrepreneurial, thus they tend to engage in more innovative activities.
- **Educational Attainment**: Includes the population between 18-24 years with a high school diploma and those 25 and older that have some level of post-graduate education.
- **Knowledge Creation and Technology Diffusion***:* Describes how likely are new technologies and knowledge creation to spread across neighboring counties and regions based on the diffusion of patent technologies (volume of patents and technology class), university-based knowledge spill overs (research and development spending on science/engineering fields and distance between the university and county region), and the density of business incubators within the region (number of business within 50 miles of the region).
- **STEM Education and Occupations**: This includes the number of STEM degree graduates per 1,000 people from higher education institutions, the concentration of jobs that apply high-tech (scientists and engineers) based on the employment share relative to total employment, and the region's share of employment in high-tech industries.

The East Central Florida region ranked 34th in the nation in the Human Capital and Knowledge Creation Index. The region ranked well in patent diversity and job growth to population growth ratio, but fell short on other measures such as cluster diversity and strength and gross domestic product. These last two findings confirm some of the trends found in the regional economic analysis, which shows the overwhelming dominance of leisure and hospitality industries in East Central Florida's economy.

Demographic Trends Analysis Major Highlights

STRENGHTS:

- Strong Population Growth
- High Level of Educational Attainment
- Growth in Health Care Occupations

WEAKNESSES:

- Low Labor Force Participation Rate
- Prevalence of Low Paying Occupations
- Growing Skills Gap

Towards Population and Labor Supply Resiliency

This population and labor force trend analysis confirms the importance of population growth to the East Central Florida regions vitality. The region has added more than 1.5 million residents during the past 25 years and this high growth rate is expected to continue until 2040. It benefits from the high number of economic and international migrants seeking new job opportunities and a better quality of life. During the time covered by this trends study, the region should have enough workers to replace the aging workforce. Moreover, the educational attainment level of East Central Florida's labor force is higher than the nations. However, the region's labor participation rate is lower than the nations in part because of the large number of retirees moving to East Central Florida. While they do not work for a paycheck, these retirees bring a variety of skills that could be put to good use in the region. At the same time, East Central Florida communities need to prepare for the expected increase in elderly residents.

The occupational analysis found 43% of the region's workforce is employed in service jobs within three major occupational groups: Office and Administrative support, Sales and related occupations, and Food Preparation and Serving Jobs. While the transition from production to service jobs is a national trend, it seems to be deeper in East Central Florida. Moreover, the occupations with the highest projected openings are Retail Sales Person, Customer Services Representatives, Registered Nurses, Waiters/Waitress and Restaurant Cooks. Most of the people working within some of these occupations earn less than $35,000 a year. Again, while this dependence of service jobs is a national trend, it seems to be more pronounced in East Central Florida because of its high volume of retirees and its dependence on leisure industries.

Finally, according to the East Central Florida Gap Analysis, the region's businesses are having a tough time recruiting people to fill their open positions. The manufacturing and health care industries showed the higher difficulties in recruiting qualified workers. Both of these industries offer pathways to training and higher paying careers.

PLACES

INTERNATIONAL SPACE STATION. MARCH 7TH, 2019 | IMAGE: NASA

The Places Pillar focuses on the community's natural and built environments, infrastructure, place-based assets, local institutions, and governance systems to attract and retain economic activity, and improve the residents' health and well-being.

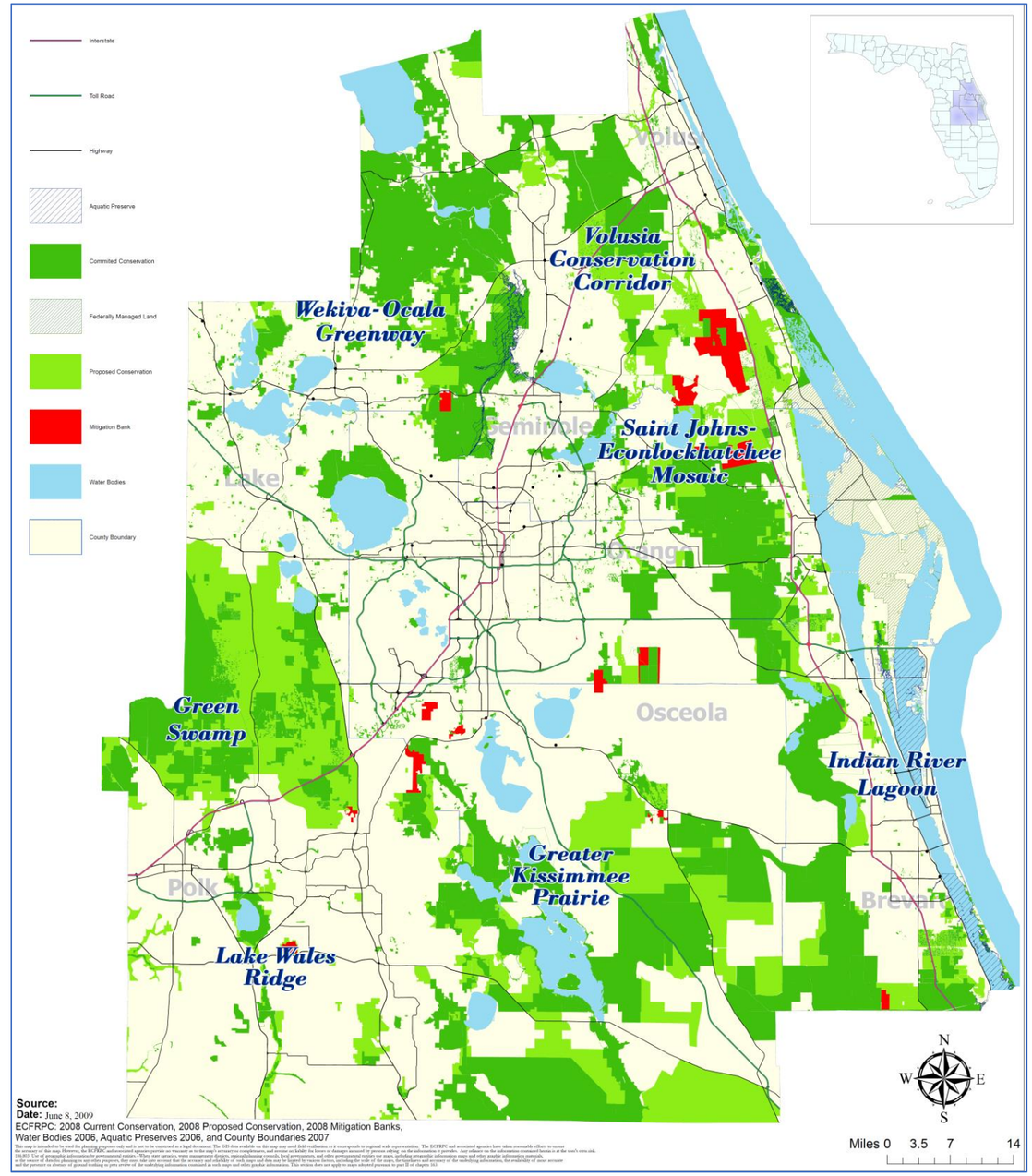
The Natural Environment

East Central Florida is home to several important natural assets including approximately 120-miles of beaches and thousands of acres of specially protected areas such as forests, wetland systems, and springs. In 2004, Natural Central Florida (a partnership between myregion.org and UCF's Metropolitan Center for Regional Studies) identified seven ecosystems of regional significance. Referred to as the Seven Jewels, these systems represent an interconnected network of natural areas that deserve the utmost level of protection as they offer significant environmental and economic value to East Central Florida. These critical natural areas are described in more detail below (clockwise).

Lake Wales Ridge: This 150-mile sand ridge includes parts of Lake, Orange, and Osceola counties. At 312 feet the ridge's highest point, Sugarloaf Mountain, is also the highest point in peninsular Florida. The area is dominated by scrub habitat but also includes sandy hills, pine flatwoods, and sinkhole lakes. The area is home to approximately 40 species of threatened and endangered plants and animals such as the Florida Scrub Jay, the Gopher Tortoise, and the Sand Skink.

Green Swamp: Encompassing 870 square miles, the Green Swamp contains the state's second largest wetland system after the Everglades. This critical ecosystem includes portions of Lake and Sumter counties. Just underneath the soil's surface is a large raised limestone plateau, which is the top of the Floridan Aquifer. It provides water for a multitude of springs, five major rivers, and countless lakes, ponds, and wetlands. In 1974, nearly 300,000 acres of the Green Swamp were designated as a State Area of Critical Concern, which provides greater development oversight.

Greater Kissimmee Prairie: This natural area is comprised of open stretches of prairie, marshes, oak hammocks, cypress domes, rivers, wetlands, lakes, and pine flatwoods encompassing parts of Orange and Osceola counties. This ecosystem is home to Shingle Creek, a small waterway that is generally considered to be the northernmost headwaters of the Everglades watershed.



The Natural Environment

Indian River Lagoon: One of the most biologically diverse estuarine ecosystems in the nation, the Indian River Lagoon (together with the Banana River and Mosquito Lagoon) is part of a large system of interconnected estuaries that stretch 156 miles along Florida's east central coast. The area is home to more than 4,300 species of plants and animals and is an important part of Volusia and Brevard counties sport fishing industry. This area includes the Archie Carr National Wildlife Refuge, a 20-mile stretch of central east coast barrier island that represents one of the most important sea turtle nesting areas in the world.

St. Johns Mosaic and Econlockhatchee River: This natural system is comprised of the basin lands that surround the St. Johns and Econlockhatchee Rivers in the eastern part of the region. Both rivers have special designations because of their important contributions to the region's history and watersheds. Both rivers have been affected by human actions such as dredging and storm water pollution.

Volusia Conservation Corridor: This corridor that stretches along Volusia and Flagler counties connects more than one million acres of publicly managed and protected lands that span from the Florida Everglades to the Okeefonokee Swamp. It is also an important linkage in Florida's migratory wildlife greenways.

Wekiva-Ocala Greenway: This natural system is comprised of dozens of natural springs, the greatest expanse of sand spine scrub in the world, and the largest black bear population in Florida. Most of this area is currently protected by the Wekiva River Protection Act (1988) and the Wekiva Parkway and Protection Act (2014). Some of the largest natural assets within this natural system are the Wekiva River, Wekiva State Park, and the Ocala National Forest.

Besides serving as habitats for multiple species and providing water to the region, East Central Florida's natural ecosystems also provide economic benefits to the region in the form of recreation and ecotourism opportunities.

Regional Case Study: Indian River Lagoon

"There is an ecological crisis in Indian River Lagoon."
- Environmental activist group Audubon Florida

Freshwater discharge from Lake Okeechobee combined with agricultural runoff disposed into the Indian River Lagoon and surrounding water systems has created a catastrophic algae bloom that has killed off much of the ecosystem's plant and animal life. This pattern of pollution has been a growing problem. Water quality data shows that the average level of phosphorous, the fertilizer byproduct that the algae thrive on, rose nearly 75 percent between 2000 and 2016. As a result, in summer 2016, an unusually high number of algae bloomed, creating an oxygen-deprived estuary, killing off an unprecedented number of fish. The "Fish kill" created a devastating stench, which combined with the toxic nature of the water, has had severe economic impacts through real estate and recreation.

Experts say the problem starts with increased freshwater runoff into the Okeechobee system, which inundates the Indian River Lagoon with nutrient-rich freshwater. Increased runoff is attributed to the more than 500,000 homes built since 2000 in the area surrounding the Indian River and Kissimmee River watershed which drains into the Okeechobee system, then Indian River. The decreased pervious surfaces make the Kissimmee River unload into the Okeechobee much faster than the system can naturally withstand.

Natural Resources and Regional Resiliency

The conservation of East Central Florida' natural habitats is vital for maintaining the region's quality of life. However, the integrity of these environmental resources is under siege because of a variety of factors including urban sprawl, over ground water extraction, water body pollution, and sea level rise.

According to the Strategic Regional Policy Plan, East Central Florida has lost more than 394 square miles of habitat since then end of World War II. Most of this land was urbanized to give way to new housing and commercial developments needed to support a growing population. Based on the REMI forecast, the region is expected to have ___ new residents in 2040. Local jurisdictions will need to identify creative ways to be able to house this new population by increasing densities and intensities, and redeveloping old corridors.

One of the resources most affected by the region's high population growth is the Floridan Aquifer system, which is the region's main water supply. Freshwater withdrawals are currently exceeding the aquifers recharge capacity, which has started to affect the quality of Florida's springs. In the future, more water will need to come from alternative sources such as the treatment of surface waters or high tech desalination plants. Another challenge is the high number of Florida homes that depend on septic tanks to treat their sewage. This has contributed to the impairment of several of the region's water bodies including the Indian River Lagoon.

Finally, warmer global temperatures are expected to have a huge impact on East Central Florida's economy and environment. Sea levels are estimated to rise at least one meter by 2100, which would require the relocation and adaptation in Florida's coastal communities. The ECFRPC has been a leader in this area. Staff have been assisting coastal communities with assessing their vulnerability to sea level rise, storm surge, floods, and coastal erosion.

Regional Best Practices: Orlando Wetlands Park

Located in the unincorporated community of Christmas, the 1,650-acre Orlando Wetlands Park is a man-made wetland designed to treat reclaimed water from the City of Orlando and other urban communities.

Photography: atrishoutofwater.com

Infrastructure

The East Central Florida region possesses several important infrastructure assets that have helped it thrive during the past decades. It is often mentioned that East Central Florida is the only place where you could travel by air, land, water, and space. The following section describes some of these transportation assets in more detail.

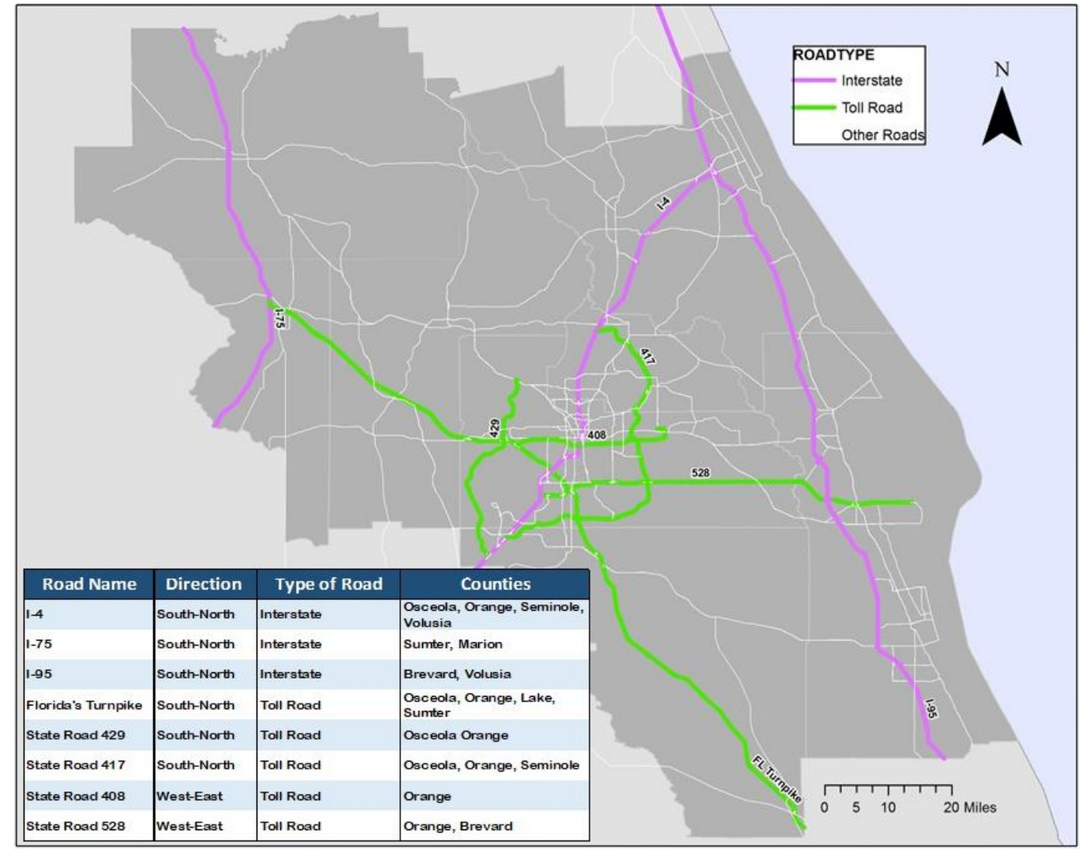
Road Network

East Central Florida's major road network is comprised of approximately 76 highways and major arterials, three interstates (I-4, I-75 and I-95), and five toll roads (Florida's Turnpike, S.R 408, S.R. 417, S.R.429 and S.R 528). This road network helps to efficiently move goods and services and commuters across the region. However, East Central Florida's roads are heavily congested, a condition that is exacerbated by the region's sprawling development patterns.

Currently, there are two main projects under construction that could help alleviate some of the areas' congestions: Interstate 4 highway currently going through a 21-mile overhaul from west of Kirkman Road in Orange County to east of State Road 434 in Seminole County and the Florida Department of Transportation (FDOT) is in the process of completing the beltway around northwest metropolitan Orlando. Known as the Wekiva Parkway, this 25-mile tolled expressway will provide a new travel alternative for those commuters traveling between Lake, Orange, and Seminole counties. To minimize the road impact's to the Wekiva River Basin and reduce accidents between vehicles and wildlife, the toll road will be largely elevated throughout its route. Moreover, more than 3,400 acres of land was set apart for conservation purposes.

While state and regional transportation agencies have continued to invest millions of dollars to add road capacity, building new roads in East Central Florida would be very difficult because of environmental constraints (lakes, wetlands, and sensitive ecosystems) and lack of new funding alternatives. Because of these reasons, regional transportation leaders have continued to invest in public transportation options.

East Central Florida's Major Road Network



Road Name	Direction	Type of Road	Counties
I-4	South-North	Interstate	Osceola, Orange, Seminole, Volusia
I-75	South-North	Interstate	Sumter, Marion
I-95	South-North	Interstate	Brevard, Volusia
Florida's Turnpike	South-North	Toll Road	Osceola, Orange, Lake, Sumter
State Road 429	South-North	Toll Road	Osceola Orange
State Road 417	South-North	Toll Road	Osceola, Orange, Seminole
State Road 408	West-East	Toll Road	Orange
State Road 528	West-East	Toll Road	Orange, Brevard

Commuter Rail

Central Florida's commuter rail, SunRail, is a 31-mile corridor currently connecting Orange, Seminole, and Volusia counties. Opened in 2014, the project's first phase included six stations starting south at Sand Lake Road in Orange County and terminating north at DeBary in Volusia County. In 2011, a 24-member consortium led by the ECFRPC was awarded a $2.4 million HUD Sustainable Communities Grant to plan for sustainable transit-oriented developments around the original SunRail stations. Most of this money was passed to local governments to assist with these planning efforts.

Today SunRail averages to 3,500 riders per day, which is well below the original estimate. Part of the problem strives from the system's limited operation schedule, which makes trains available only on weekdays during commuting times. Gas prices pre-COVID remained very low during this time period which made driving more enticing. But due to the rise of gas prices post-COVID, ridership has increased, as per *mynews13.com* stated, "SunRail saw a 23% increase in February [2022] ridership when compared to January of [2022]. Finally, several jurisdictions have struggled with how to transport SunRail users from the stations to their final destination (the last mile connection). Some commuters subsidize Uber rides to and from the station. The opening of Sun Rail's second phase in July 2018, connected the system to Osceola County, which further helped in the increase of rideshare numbers.

Buses

East Central Florida is served by several fixed-route transit bus systems. The largest one is LYNX which serves Orange, Osceola and Seminole counties and small portions of Lake and Polk counties. LYNX buses transport approximately 41,053 per weekday as of FY 2022, a dip from 85,500 people per day along a 2,500 square mile area in 2016. The decline of ridership is a direct result from the COVID pandemic. The company also operates LYMMO, Orlando's downtown circulator. Other fixed-bus transit systems within the region are LakeXpress (Lake County), Space Coast Area Transit (Brevard), Sumter County Transit, and VOTRAN (Volusia County). The effectiveness of East Central Florida's bus transit systems is currently hindered by two factors. One is the lack of a dedicated funding source (particularly in the case of LYNX) and two, the region's low densities discourage the development of Bus Rapid Transit (BRT) routes that could help to improve capacity and increase reliability.

SunRail Route

Airports

East Central Florida is home to four international airports- Daytona Beach, Orlando International Airport, Orlando-Sanford, and Orlando Melbourne- that provide connections to multiple locations around the world. OIA is the biggest airport facility on the region transporting an average of 118,000 passengers per day. OIA is currently in the midst of building a new South Terminal to increase the airport's capacity. The region also has 14 municipal airports that provide a variety of aviation support services such as flight instruction, cargo transportation, and other related uses.

Port

Port Canaveral is the largest port facility within the region. It is one of world's largest cruise ports, carrying 4.2 million passengers in 2016. The port area is home to numerous recreational facilities including the Exploration Tower and Cove harbor-side dining and retail areas and several public parks. Several investments have been made to increase the facility's cargo carrying capacity which reached 5.5 million tonnage in 2016. The Port Authority recently opened a new logistics center in Titusville.

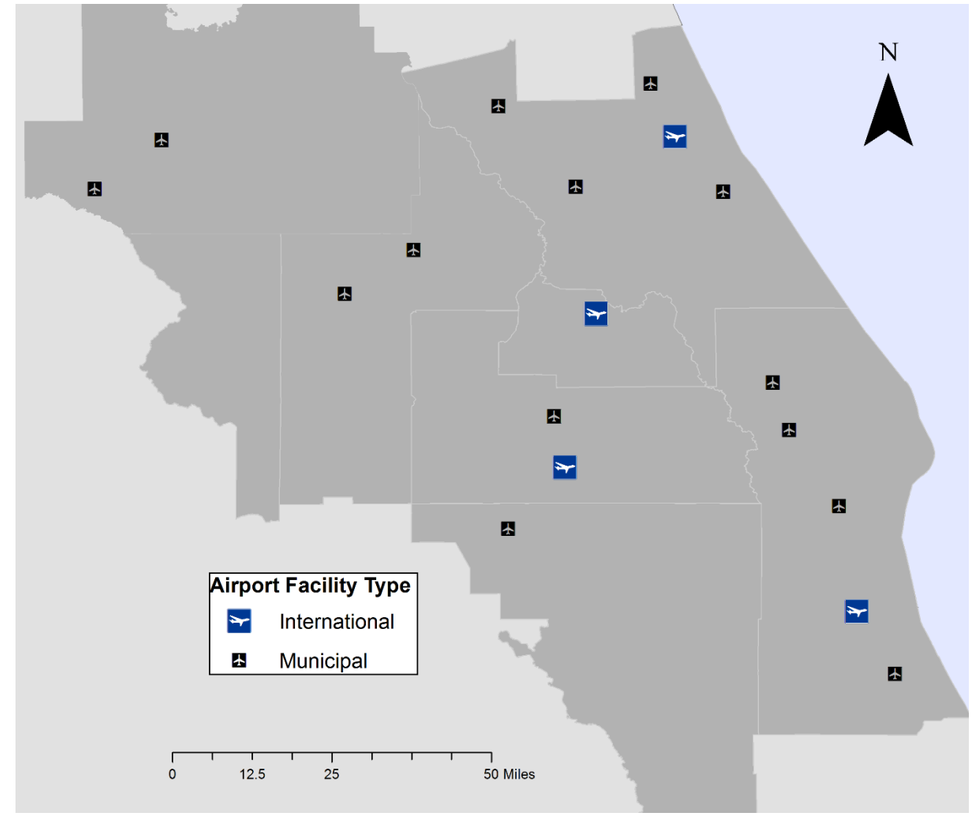
Rail Service

Amtrak operates four long distance routes across the state that pass through East Central Florida. These train lines are the Auto Train (Washington DC-Sanford), the Silver Meteor (New York-Orlando-Tampa-Miami), and the Silver Star (New York-Orlando-Miami). In the near future the region is expected to be served by the Brightline, a high-speed intercity express train service connecting Miami and Orlando. This new rail service is expected to service over 50 million passengers. East Central Florida also has a freight rail network comprised of Class I (CSX), Class II (FEC) and Class III (Florida Central) railroads. CSX has major railyard and distribution operations in Orlando and Sanford.

Space Port

Regional leaders are working to position Kennedy Space Center (KSC) as the premiere destination for passenger and cargo deliveries to space. Space Florida's Vision 2020 plan identifies ten markets that could potentially benefit from KSC's infrastructure facilities. Moreover, private space companies like Blue Origin and SpaceX have opened operations at KSC.

East Central Florida's Public Aviation Facilities



Sources: Infogroup, ECFRPC Research

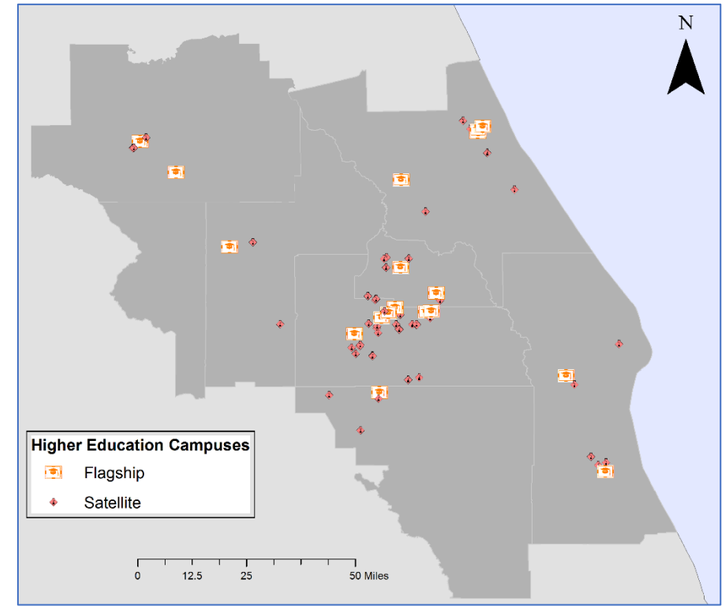
Higher Education Infrastructure

East Central Florida has an abundance of higher education institutions that provide residents with the opportunities to earn a variety of professional certifications, associates, bachelors and graduate degrees. ECFRPC staff identified over 60 public and private universities with campuses located across the region. The largest of these is the University of Central Florida (UCF), which is also the second largest university in the nation. Located in east Orange County, UCF is currently building a new location in downtown Orlando in partnership with Valencia College. Other large flagship institutions include the Florida Institute of Technology in Brevard County, Full Sail University, and Rollins College in Orange County, and Bethune-Cookman, Stetson University and Embry-Riddle Aeronautical University in Volusia County. All these universities offer academic programs that are nationally ranked among the best in the nation. Several national private universities also have satellite campuses across the region.

The region's college system (College of Central Florida, Daytona State, Eastern Florida State, Lake-Sumter State, Seminole State, and Valencia College) is another important educational asset. Most students start their education at one of these institutions and then transfer to a larger university. However, since 2009 most of Florida's colleges also offer four-year bachelor's degrees. East Central Florida's colleges have multiple campuses located across the region, which helps them reach more traditional and non-traditional students. They also are recognized for providing a quality education at an affordable price. For example, in 2011 Valencia College received the inaugural Aspen Prize for Community College Excellence.

One the region's hidden educational assets are its vocational technical schools. These institutions offer relatively short, career-focused programs that quickly prepare graduates for the workforce. These institutions are key to preparing highly sought "middle skill" workers needed by fields such as manufacturing/fabrication and the construction trades. In East Central Florida, Orange County Public Schools runs the largest vocational program in the region with five locations.

Higher Education Institutions



Sources: Infogroup, ECFRPC Research

Regional Best Practices: Creative Village

Creative Village is a public/private partnership in which the University of Central Florida and Valencia College worked with developers and city officials to construct a Downtown Orlando educational campus. The project broke ground in May 2017, building upon the region's digital media and hospitality industries. Located on the vacant site of the old Amway Arena, the campus opened in Fall 2019 with an attendance of an estimated 7,000 students. With Phase 2 gearing up for construction, the educational complex will offer up to 1,000,000 square feet of office/education space, with a final estimated investment value of $1 billion. The project features ambitions for mixed-use development and transit-oriented design. In 2022, Electronic Arts video game development studio, or EA, moved its offices from Maitland to the Creative Village.

Places

Planners, economic developers and other professionals often use the phrase "live, work and play" to describe the attributes of the perfect community. However, in reality these environments rarely coexist within the same location. Most Americans commute to downtown jobs from far flung suburbs and choose to entertain themselves outside of these two locations. These strict separations of uses do not provide a clear path to community resiliency. This is important as geography has been continuously proven to have important effects over everything from community health to economic mobility. To achieve resiliency, community leaders need to learn how to harness the region's-built environment to attract new investment and increase overall quality of life. This section of the CEDS provides an overview of East Central Florida's communities and places of work.

Live

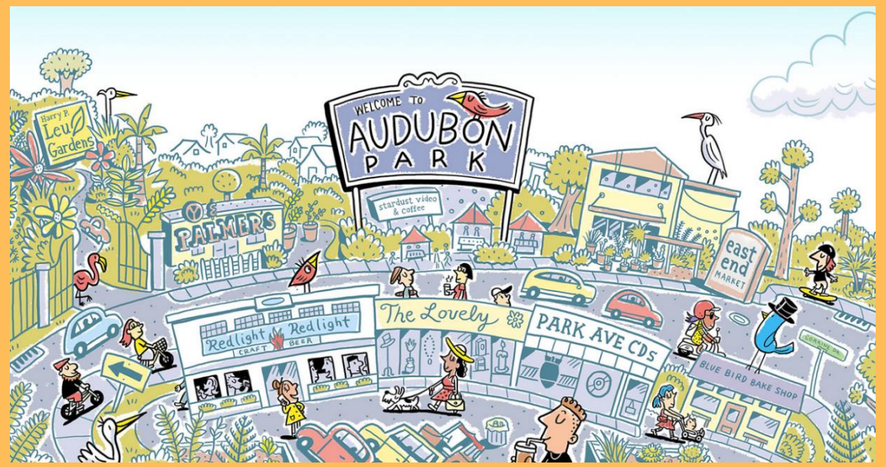
Because of its high migration levels and abundance of low paying jobs, East Central Florida continuously struggles with housing affordability. Most of the region's residents spend over 30% of their income on housing costs, especially when transportation costs are taken into account. Based on information from the Center for Neighborhood Technology's H+T Index, all of East Central Florida's metro areas are considered to be cost burdened with residents spending between 50 and 62 percent of their income on housing and transportation costs. This situation is attributable to a variety of factors. This includes neighborhood's low access to jobs and transit and the very low-density development patterns predominant within the region and discourage walkability.

Community design has a deep impact on the health, security and general well-being of residents. An example of this is walkability. According to Smart Growth America's Dangerous by Design Study, as of 2021, Orlando-Kissimmee-Sanford (1), Palm Bay-Melbourne-Titusville (3), and Deltona (5) are ranked among the five worst metro areas for pedestrians in the entire nation. These rankings reflect both the number of people who walk to work and the number of pedestrian fatalities. These are important issues that need to be addressed to improve the quality of life in our region.

MSA/County	Costs as Percent of Income		
	Housing	Transportation	Total
Deltona	32%	30%	62%
Marion	30%	30%	60%
Orlando	30%	23%	53%
Palm Bay	25%	26%	51%
Sumter	27%	23%	50%

Source: Center for Neighborhood Technology H+T Index – June 2022

Regional Best Practices: Corrine Drive Complete Streets Study



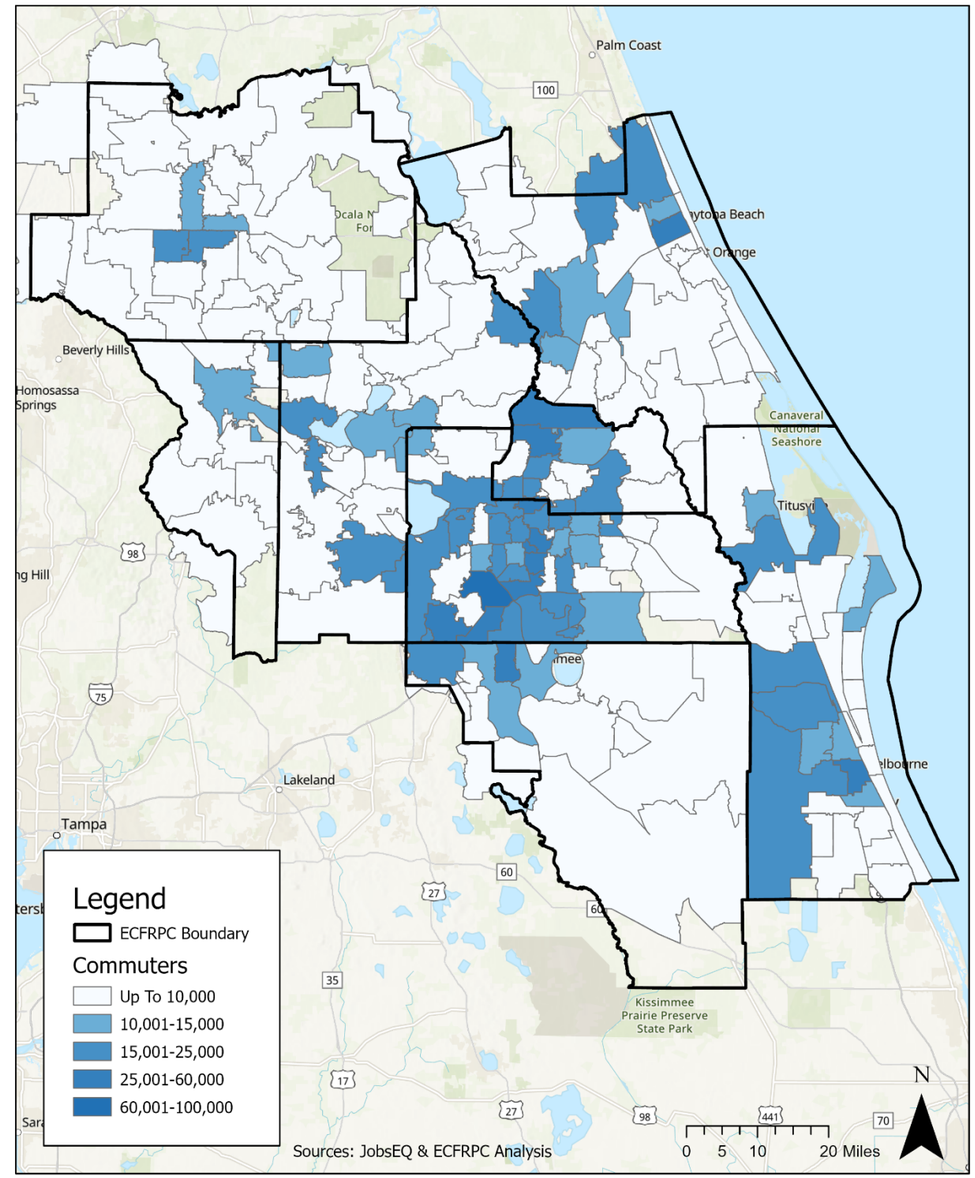
Located in Orlando's East End, the Audubon Park Garden District is home to a number of specialty shops and eateries. The area first grew after WWII as a commercial destination dominated by strip malls and heavy traffic. Recently, efforts to revitalize the community to have a strong sense of place have attracted national recognition. In 2016, The National Main Street Center honored Audubon Park with a Great American Main Street Award, an honor that recognizes the country's best example of commercial district revitalization. Buildings on this place making success, MetroPlan Orlando, in partnership with the City of Orlando, Orange County, and the City of Winter Park. has launched a Complete Streets Study on the Corrine Drive corridor. This study will explore opportunities to transition this corridor from an arterial thoroughfare into a Complete Street designed for people, pedestrians, and bicycles, not just cars.

Despite the economic and demographic primacy of Orange County and the City of Orlando, East Central Florida is considered a polycentric region, which our region is organized around multiple political, social, and financial centers. In the case of jobs, they are dispersed all throughout East Central Florida. To identify regional employment centers, ECFRPC staff used commuting data from the JobsEQ at the ZCTA level. ECFRPC analysis was applied to the number of region residents commuting to a specific ZCTA, which are ZIP Code Tabulation Areas, geographies created by the U.S. Census Bureau.

Based on the total number of commuters to a specific ZCTA for all ECFRPC residents, the largest destination ZCTAs can be found in Universal/I-Drive (85,000), the Disney Theme Parks area (57,513), Downtown Orlando (55,497), Florida Mall area (46,320), and Heathrow/Lake Mary (44,001). These areas are home to some of the region's largest employers. The influence of East Central Florida's tourism sector is easily detected in the data, as the two highest ZCTAs with the highest commuter counts contain Disney World, Universal Orlando, and many other attractions within the International Drive district. While ZCTAs with large commuting numbers can be found in every county in the East Central Florida region, Orange County contains the biggest concentration of high commuting destination ZCTAs. This is to be expected as the county serves as the economic and transportation hub of the Orlando metropolitan area, in addition to the dominant tourism sector. It is important to note that ZCTAs with large commuting numbers can be found throughout the I-4 corridor from Osceola County through Volusia County. The importance of this corridor for transportation as well as the presence of large office parks (such as Heathrow/Lake Mary) and other important employment centers located near the highway illustrates how this facility is a major driver of economic activity in the region.

These employment corridors provide an important economic value to the East Central Florida region. For these employment centers to continue to thrive, it is important that planners take special consideration when assessing land use changes and evaluate future infrastructure improvements.

Regionwide Commuting Destination ZCTAs



Play

Being home to several of the world's most visited theme parks and countless miles of beaches and natural amenities, the East Central Florida region contains many exciting destinations where residents and visitors can enjoy their leisure time. The region's municipalities have done a very good job preserving their downtown areas using the Community Redevelopment Areas (CRAs). The purpose of the CRA program is to help communities address the presence of substandard or inadequate structures, a shortage of affordable housing, and inadequate infrastructure. According to the Florida Legislature's Office of Program Policy Analysis and Government Accountability, the region has over 60 CRAs. All redevelopment activities within these targeted districts are funded using revenues generated through tax increment financing. This tool allows CRAs to use revenues from real property value increases to fund infrastructure projects and provide grants to local businesses.

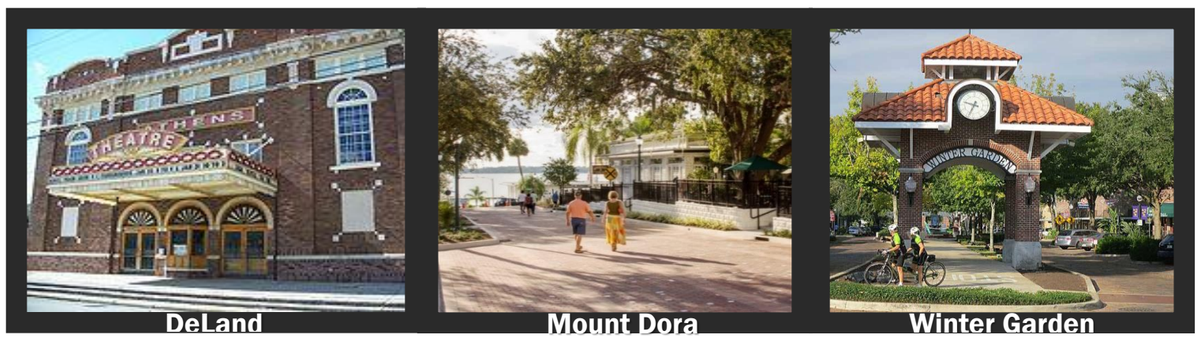
Another revitalization tool is the Main Street Program, which targets traditional neighborhood commercial districts across the City of Orlando. All ten of the City's Main Street Districts receive annual financial support, technical assistance and intensive training. In turn, each district is responsible for hiring a full time Executive Director and raise matching funds to implement its programs according to an annual work plan. Several success stories have come from the Orlando Main Street's Program including the designation of the Audubon Park Garden District as 2016's Great American Main Street, a national honor.

The success of the region's CRAs and Main Street Districts is predicated upon two things. These areas need to complete a neighborhood plan that details the capital improvements to be funded and annual programs and activities that need to be completed. While good leadership is important, strong community support is even more pivotal. All these districts rely on the work of volunteers to complete most of their activities making them a good vehicle for community engagement.

Regional Best Practices Downtown Sanford Redevelopment

Historic Sanford rests on the waterfront of Lake Monroe, a mouth to the St. Johns River. Sanford's Community Redevelopment Agency began upgrading their 1st Street streetscape project in 2004, which was the commencement of their modern redevelopment. In 2007, The Community Redevelopment Agency identified 4.3 miles of "blighted land" within the Lake Monroe Waterfront and Downtown Sanford area. Outlined within the City of Sanford's Redevelopment Master Plan, last amended 2009, the CRA was to pursue redevelopment and revitalization of Downtown and establish it as a regional center, improve neighborhood conditions and social equality, and integrate function and transportation to the Downtown-Waterfront area. The CRA also stimulates growth by financing promotions and events, such as "Alive After Five", a monthly downtown street festival.

Post Cards from East Central Florida's Downtowns



The main goal of economic growth is to increase overall regional prosperity and wealth. This is achieved by raising the standard of living for the community's residents. Stats America measures prosperity using the Economic Well-Being Index, which is comprised of the following measurements:

- **Per Capita Personal Income Growth:** Calculated by the average annual rate of change (2002-present) based on the individual's place of residence
- **Compensation:** Includes both the growth of Annual Wage and Salary Earnings per Worker and the Change in Proprietor's Income per Proprietor from 2002 to the latest year available.
- **Income Inequality***:* This measurement is used to represent a region's skewed income
- **Average Poverty Rate:** Reflects the region's population living below poverty
- **Average Unemployment Rate:** The three-year average of unemployment
- **Dependence Ratio – Measured by Income Sources**: Reflects the degree in which a region relies Social Security, disability, and other welfare payments.
- **Average Net Migration**: Indicates the appeal of the region or county of interest.

East Central Florida is ranked in the bottom 20% of this index. This is most heavily driven by factors related to income growth, which is among the worst in the nation (380 out of 384). This low level of labor compensation has detrimental consequences for our region. United Way's ALICE report found that 45% of East Central Florida's residents are unable to adequately support themselves before accounting for any sort of savings. The ALICE acronym stands for the households in our community that are asset limited, income constrained, but employed. Despite being fully employed, this population struggles to afford basic household necessities such as childcare and transportation. The report breaks down living costs by county and compares them against household earnings and demographic information.

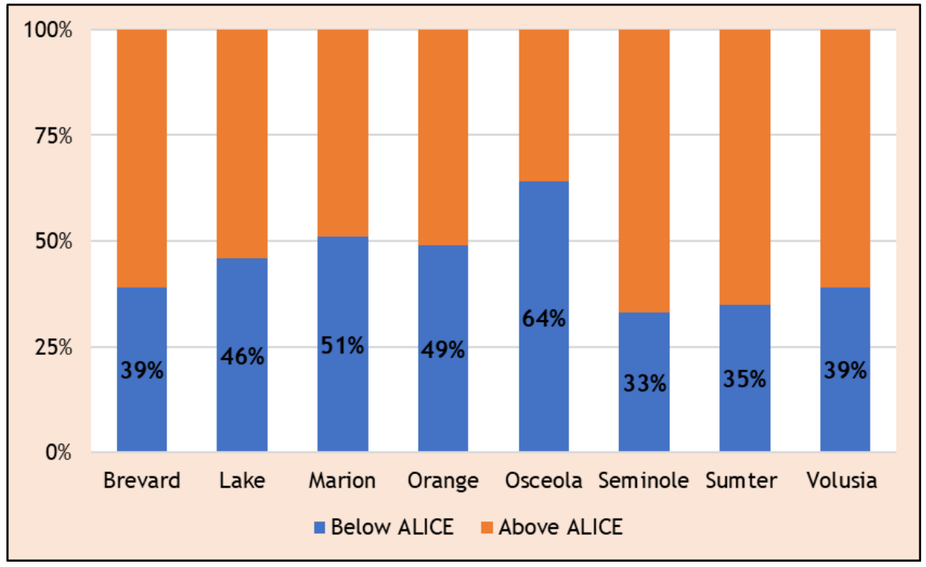
2022 update - Highest rank measure is 154, East Central Florida is at 120.5

Economic Well-Being Index

Measurements

- Per Capita Personal Income Growth
- Income Inequality
- Poverty Rate
- Unemployment
- Dependency Net Migration
- Compensation

Percentage Households below ALICE Standards by County



Source: United Way of Florida's ALICE Report

Making East Central Florida a Resilient Place

Based on the results of this assets inventory, the East Central Florida region is home to seven unique natural jewels that are currently under threat because of urban sprawl, groundwater over-extraction, water body pollution, and sea level rise. The high number of residents expected to move into the region within the next 25 years would put even more pressure on these precious systems. The region's leaders would have to identify creative ways to house these new residents without affecting these ecosystems. On a positive note, there are currently efforts underway to restore important natural areas such as the Indian River Lagoon.

One of the region's biggest assets is its infrastructure. East Central Florida is one of the few places in the nation where people can choose to travel by car, train, boat, airplane, and space ship. However, congestion is certainly a problem in most of the East Central Florida's major transportation corridors. Moreover, despite the progress made during the past few years, its public transportation system is still inadequate for a burgeoning region. East Central Florida does possess a solid higher education system comprised of over 60 institutions. This diversity of institutions has helped to improve the region's education attainment.

East Central Florida is a very young region that grew based on the advent of the space age and Walt Disney World. This situation has led to the creation of sprawling communities that are dangerous for pedestrians and relatively expensive to live. Job sprawl is a common feature in East Central Florida, with the densest employment centers located along I-4. Local governments within the region should pay attention to these corridors and identify opportunities to better connect these employment centers. Moreover, there are currently several efforts underway throughout the region to activate and revitalize downtown core areas and traditional commercial corridors.

While East Central Florida has continued to grow exponentially, economic prosperity has not reached everyone. Both the Stats America Economic Well-Being Index and United Way's ALICE report confirm that a good portion of East Central Florida's population is not receiving the benefits of economic growth. This is partly due to a misunderstanding of what makes East Central Florida a competitive region. Business leaders and policy makers need to focus their efforts on developing strategies to increase the region's quality of life and make it a more resilient place.

Place-Trends Analysis Major Highlights

STRENGHTS:

- Unique Environmental Features
- Strong Infrastructure Investment
- Urban Revitilizations Efforts

WEAKNESSES:

- Urban Sprawl
- Inadequate Public Transportation
- Low Levels of Economic Prosperity

PROSPERITY

ONEWEB SATELLITES, MERRITT ISLAND | IMAGE: ENTERPRISE FLORIDA

The Prosperity Pillarharnesses major industry assets and innovation systems to promote paths of upward social mobility, equity, and inclusive economic development.

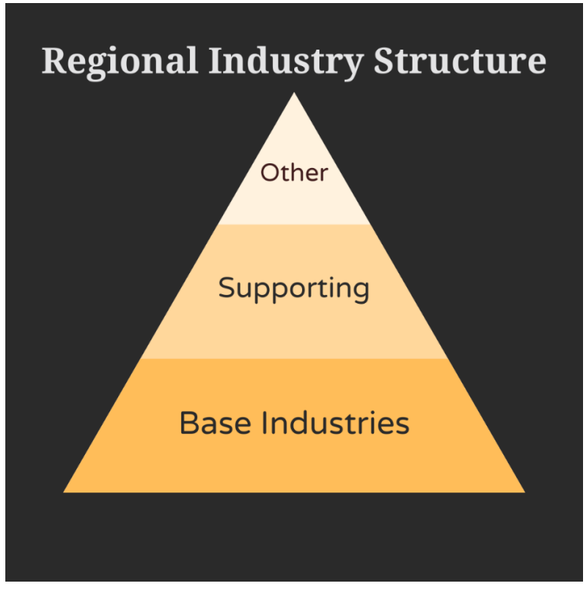
Economic Structure

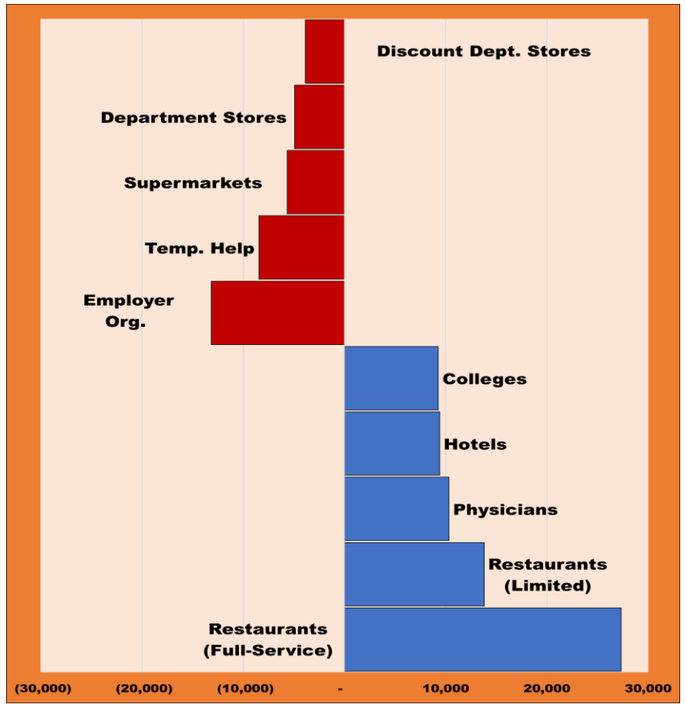
When analyzing economic trends, it is imperative to understand the underlying structure of the region's economy. The term economic structure simply refers to the distribution of economic activity by industry in a regional economy. Industrial structure not only influences the region's employment patterns, but it also has significant effects on business trade flows (inter-industry spending patterns), occupations, income generation, and other economic variables. Most important for the CEDS process is to identify those industries that are driving economic growth within the region.

According to REMI, in 1990 the dominant economic super sectors in East Central Florida were Trade, Transportation and Utilities (TTU), Leisure and Hospitality, and Professional and Business Services. The TTU super sector is comprised of four industrial sectors: Wholesale Trade, Retail Trade, Transportation and Warehousing, and Utilities. Leisure and Hospitality consists of establishments within the Arts, Entertainment, and Recreation and Accommodation, and Food Services sectors. Finally, Professional and Business Services is another broad super sector that encompasses a variety of industries that provide specialized services. These include three sectors: Professional, Scientific, and Technical Services, Management of Companies and Enterprises, Administrative and Support, Waste Management, and Remediation Services.

The region's economic structure started shifting in the 2000s. Both Professional and Business Services and Leisure and Hospitality started to overtake TTU as the dominant super sectors. Moreover, between 2010 and 2015, the Educational and Health Services super sector rose ahead of TTU. The REMI forecast has these three super sectors dominating East Central Florida's economy through 2040.

While this trend analysis provides a good overview of the East Central Florida's changing economy, its information is too aggregated to give any good insights about the region's industry structure. Because of this reason, the ECFRPC decided to use data from the U.S. Census County Business Patterns (CBP) create a more accurate analysis of change by industry. This analysis compares data from 1998 and 2014. The information is organized using the North American Industry Classification System (NAICS) at the six-digit industry level (most disaggregated). This required the ECFRPC to look at data from over 600 different industries.





Regional Winners and Losers

East Central Florida Industry Trends

The first part of the economic trends analysis is to identify the industries that gained and lost the highest number of jobs during the study period. This would help to identify structural changes in East Central Florida's economy. It is important to note that the NAICS system suffered some major changes across particular industries that reflected overall changes in the economy. For example, several manufacturing industries were consolidated due to their decline at the national level. In addition, the rise of the internet led to the creation of new industries within the information and retail sectors. Using CBP employment data, the ECFRPC worked to identify the biggest winners and losers among the region's industries.

Overall, there were 93 industries that gained at least 1,000 employees during the 16-year study period. The largest employment gainers were restaurants (full-service and limited) with over 52,000 new jobs. Other large employment gainers were Doctor Offices (10,315), Hotels (9,411), Colleges (9,271). Other industries that created more than 5,000 jobs were Theme Parks (9,224), Family Clothing Stores (8,461), Corporate and Regional Headquarter Offices (8,248), Telemarketing Bureaus (8,088), and Home Centers (8,031). Most of these industries are either tied to the Leisure and Hospitality super sector or increased jobs to serve East Central Florida's growing population.

In contrast, there were more than 300 industries that lost jobs during this period. Leading in job losses were Professional Employer Organizations (13,170), Temporary Health Services (8,463), Supermarkets (5,665), Department Stores (4,926), and Discount Department Stores (3,861). Most of these losses were in the retail sector and could be partly attributed to the aggressive expansion of certain vendors (Walmart) and the rise of e-commerce.

There were 15 other industries that lost more than 1,000 jobs. These losses could be attributed to a variety of factors and events including the collapse of the real estate market during the recession (New Single-Family Housing Construction, Building Material Dealers, Masonry Contractors), the end of the Space Shuttle Program (All Other Support Services), the move of manufacturers to Southeast Asia (Semiconductor and Related Products, Other Commercial and Service Machinery, Other Electronic Parts and Equipment Wholesalers, Telephone Apparatus, and Bare Printed Circuit Boards), and changes in consumption patterns (News Paper Publishers, Cable and Other Programming Distributors, Video Tape and Disc Rental, and Commercial Printing).

Photo: smartasset.com

Shift Share Analysis

While knowing the industries that are gaining or losing jobs is important, it is pivotal to understand the reasons why these changes occurred in the first place. The shift share analysis methodology helps to differentiate between the regional employment changes driven by local factors versus those provoked by national and industry trends. Thus, it compares industry changes at the regional and national level. Shift Share analysis partitions local employment into three distinct components: the national share, which reflects trends in the U.S economy; the industrial mix, which includes industry factors; and regional trends, which points to local competitive advantages and weaknesses.

The industries that gained the largest number of employees in East Central Florida mostly grew because of favorable conditions at the national level. On the other hand, most of the largest employment losses of could be attributed to particular changes within these industries. Several industries did experience employment growth or declines because of local competitiveness factors. For example, job growth in the College and Universities industry is probably a result of the University of Central Florida's (UCF) efforts to become the second largest university in the nation. Several of the region's economic development organizations have also targeted the recruitment of call centers to the region. Finally, the demand for new homes has probably spurred the rise of home center stores across East Central Florida. On the other hand, it seems that the region lost jobs in Employment Organizations because of regional competitiveness issues.

Besides these previous industries, the shift-share analysis identified 21 other industries that added more than 1,000 jobs because of regional factors. Of these, the nine largest industries by total employment were: All Other Travel Arrangement Services (4,164), Other Activities Related to Credit Intermediation (3,130), Data Processing and Hosting (3,907), Advertising Agencies (2,806), Site Preparation Contractors (2,566), Mail Order Houses (2,136), Specialty Hospitals (1,935), Industrial Machinery and Equipment Wholesalers (1,915), and Other Warehousing and Storage (1,849). These large employment gains suggest that these are industries where East Central Florida is economically competitive.

Regional Industry Winners

INDUSTRY SECTOR	NATIONAL	INDUSTRY	REGIONAL
Full-Service Restaurants		✓	
Limited-Service Restaurants		✓	
Physician Offices		✓	
Hotels and Motels		✓	
Colleges and Universities			✓
Amusement and Theme Parks		✓	
Family Clothing Stores		✓	
Corporate Subsidiaries		✓	
Call Centers			✓
Home Centers			✓

Regional Industry Losers

INDUSTRY SECTOR	NATIONAL	INDUSTRY	REGIONAL
Employment Organizations			✓
Temporary Agencies			✓
Supermarkets and Other Grocery Stores		✓	
Department Stores		✓	
Discount Department Stores		✓	
Footwear Manufacturing		✓	
New Single-Family Housing Contractors		✓	
Semiconductor Manufacturing			✓
Other Building Material Dealers		✓	
All Other Support Services			✓

Sources: CBP 1998 and 2014

Industry Concentration

Industries can be defined either as Local or Traded, depending on the type of market they serve. Local industries produce most of their products and services for local consumption. Traded industries produce goods and services that are mainly exported outside the region. Traded industries can create more wealth for local economies from their export activities and their ability to bring in outside money. Location Quotients and the percentage of regional share of national employment ratios can be used to analyze local and traded industries.

Location Quotients (LQs) help to measure the industry employment concentrations that operate in the region. The LQ is a ratio that compares the region's employment in a certain industry against national employment in that industry. If the industry's LQ is higher than 1, then the region has a higher concentration of employment in that particular industry than the rest of the nation. The assumption is that the extra capacity is used to produce goods and services to export. This can be a signal of regional strength in that particular industry. On the other hand, if the LQ is less than 1, the local industry has lower employment than the national rate. This means that the region is producing less goods and services than needed to satisfy local demand, which means that these products would need to be imported.

The ECFRPC prepared an LQ analysis for all of East Central Florida's industry sectors, with a special focus on those that employ around 1,000 people or more. Based on this criteria, the region's highest LQs were for a diverse group of industries that serve the Manufacturing sector. These include Guided Missile & Space Vehicles, Other Guided Missile Parts, Boat Building, Optical Instrument & Lenses, Other Commercial & Service Industry Machinery, and Search Detection & Instrument Manufacturing. East Central Florida has specialized in two Leisure & Hospitality industries: Amusement & Theme parks and Hotels. Finally, the Flight Training industry's high location quotient is probably related to the Modeling Simulation and Training industry.

Industries with High Employment and High Location Quotients

Industry	LQ	Employees	Sector
Amusement and Theme Parks	29.74	53,339	Leisure and Hospitality
Guided Missile and Space Vehicle	10.62	9,309	Manufacturing
Space Research and Technology	9.80	2,176	Government
All Other Travel Arrangement Services	9.61	7,695	Professional and Business Services
Boat Building	6.76	3,858	Manufacturing
Optical Instrument and Lens	5.14	1,379	Manufacturing
Other Commercial and Service Industry Machinery	5.13	3,824	Manufacturing
Search, Detection and Instrument	4.79	7,758	Manufacturing
Court Reporting and Stenotype Services	4.37	1,453	Professional and Business Services
Floriculture Production	3.98	2,153	Natural Resources and Mining
Legislative Bodies	3.95	15,135	Government
Flight Training	3.62	1,055	Education and Health Services
Nursery and Tree Production	3.52	3,719	Natural Resources and Mining
Semiconductor and Related Device	3.51	8,101	Manufacturing
Land Subdivision	3.33	1,612	Construction
Hotels (except Casino Hotels) and Motels	3.33	49,647	Leisure and Hospitality

Sources: JobsEQ & ECFRPC Analysis

Innovation and Regional Competitiveness

One of the harbingers of regional economic competitiveness is the level of innovation. The ECFRPC used data from the U.S Patent and Trademark Office to identify the technologies and industries that are driving innovation within East Central Florida. According to this data, East Central Florida's organizations and individuals were awarded a total of 20,711 patents between 2000 and 2015. At number 59, Palm Bay is the highest ranked metropolitan statistical area in East Central Florida in terms of patent awards. It also accounts for 48 percent of the region's patents. The Palm Bay MSA is followed by Orlando (61) and Deltona (158) in ranking. The Villages MSA had less than 35 patents awards during this period. It is difficult to assess the relevancy of these rankings since the top MSAs also have larger population counts than our region. However, for comparison purposes, the Miami MSA was awarded 15,724 patents and the Tampa Bay MSA received another 6,810 during the same period.

When assessing East Central Florida's innovation competitiveness, it is more important to examine the region's progress in the individual patenting technologies. The U.S. Patent Classification Systems has over 400 classes. East Central Florida's metro areas have mostly specialized in the same patenting classes. The technology class with the highest number of patents was Multiplex Communications (443) followed by Semiconductor Device Manufacturing (314) and Telecommunications (350). Based on ECFRPC research, most of these patents can be associated to particular industries including communications technologies, turbines, vehicles, and photonics.

East Central Florida metros rank among the ten highest in the nation for several patenting technologies. For example, the Palm Bay MSA ranks fourth on Radio Wave Antennas and ninth in Waves Transmission Lines and Networks. Metro Orlando is ranked eighth in the nation in Rotary Motors technology class and twelfth in the Power Plants and Impellers classes.

Another positive driver of innovation is the research performed by the region's universities. With a total of 46 patents obtained in 2020, the University of Central Florida (UCF) ranked 60th among the world's universities.

Technology Classes with Highest Number of Patents in East Central Florida

Patenting Technology Classes	# of Patents in Region
Multiplex Communications	443
Semiconductor Device Manufacturing	314
Telecommunications	350
Radio Wave Antennas	309
Solid- State Devices	215
Power Plants	264
Pulse or Digital Communications	180
Communications: Directive Radio Wave Systems	150
DP: Vehicles, Navigation	169
Rotary Kinetic Fluid Motors or Pump	136

Source: U.S. Patent and Trademark Office

SBIR/STRR

The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are highly competitive programs that encourage domestic small businesses (those with under 500 employees) to engage in Federal Research/Research and Development (R/R&D) with the potential for commercialization. Through a competitive awards-based program, SBIR and STTR enable small businesses to explore their technological potential and provide the incentive to profit from its commercialization. By including qualified small businesses in the nation's R&D arena, high-tech innovation is stimulated, and the United States gains entrepreneurial spirit as it meets its specific research and development needs. Central to the STTR program is the partnership between small businesses and nonprofit research institutions. The STTR program requires the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations.

The calculations for number of awards are based on 2019-2021 data, but SBIR has been collecting research data since 1983. And since 1983, SBIR has given 195,885 awards to 98216 companies that have participated, with a monetary amount that averages to a grand total of $41,046,253,424.19. The SBIR is congressionally mandated, requiring every federal agency that has an external research budget above $100 million to earmark between 1.5% to 3.2% of their budget for small businesses. Federal agencies such as NASA, Department of Education Department of Energy, and the National Science Foundation are participants.

Companies with Largest Number of SBIR/STRR Awards in the Region

Company	Number of Awards	Innovation Cluster
Mainstream engineering Corp.	240	Various
Securboration, Inc.	58	None
Design Interactive, Inc.	53	MS&T
Modus Operandi, Inc.	42	None
Dignitas Technologies, LLC	18	MS&T
Irglare, LLC	17	Laser and Photonics
Vcom3D, Inc.	16	MS&T
Plasmonics Inc.	14	Laser and Photonics
Engineering Acoustics Inc.	14	MS&T
Optigrtae Corporation	14	Laser and Photonics
Sciperio, Inc.	13	None
Beam Engineering For Advanced Measurements Co.	13	Laser and Photonics
Hesperos, Inc.	11	None
RINI Technologies Inc.	11	None
Helicon Chemical Company LLC	9	Aviation and Aeriospace
Simetri, Inc.	8	MS&T
SDPHOTONICS LLC	7	Laser and Photonics
Aeronix, Inc.	7	Telecommunications
VR Rehab Inc.	7	MS&T
AET, Inc.	6	None

Number of Awards per County

Programs	Brevard	Lake	Orange	Osceola	Seminole	Volusia	Grand Total
SBIR	351	9	241	7	90	8	706
STTR	61	3	38	0	4	4	110
Grand Total	**412**	**12**	**279**	**7**	**94**	**12**	**816**

Monetary Award Amount per County

County	Award Amount
Brevard	$177,365,244
Lake	$4,558,352
Orange	$120,069,965
Osceola	$2,907,639
Seminole	$39,887,636
Volusia	$2,105,549
Grand Total	**$346,894,386**

East Central Florida's Innovation Clusters

For the past three years, the ECFRPC has been working to identify the industry clusters driving economic competitiveness within the East Central Florida region. An industry cluster is defined as a regional concentration of inter-related industries that mainly export their goods and services. These business networks are the most important wealth creators within the region. When selecting the region's innovation clusters, the ECFRPC focused on the following attributes. First, these industries must show a high level of concentration within the region based on location quotients. Moreover, they need to have a strong presence in at least two of East Central Florida's counties. There must also be an implicit relationship between these businesses such as producer-supplier ties. Finally, these clusters need to show a high level of innovation based on the number of patents awarded.

Based on these characteristics, the ECFRPC has initially selected seven regional innovation clusters: Tourism, Avionics, Boats and Other Marine Vessels, Photonics, Turbines, Modeling Simulation and Training, and Telecommunications. A general overview of these clusters is provided within the next pages.

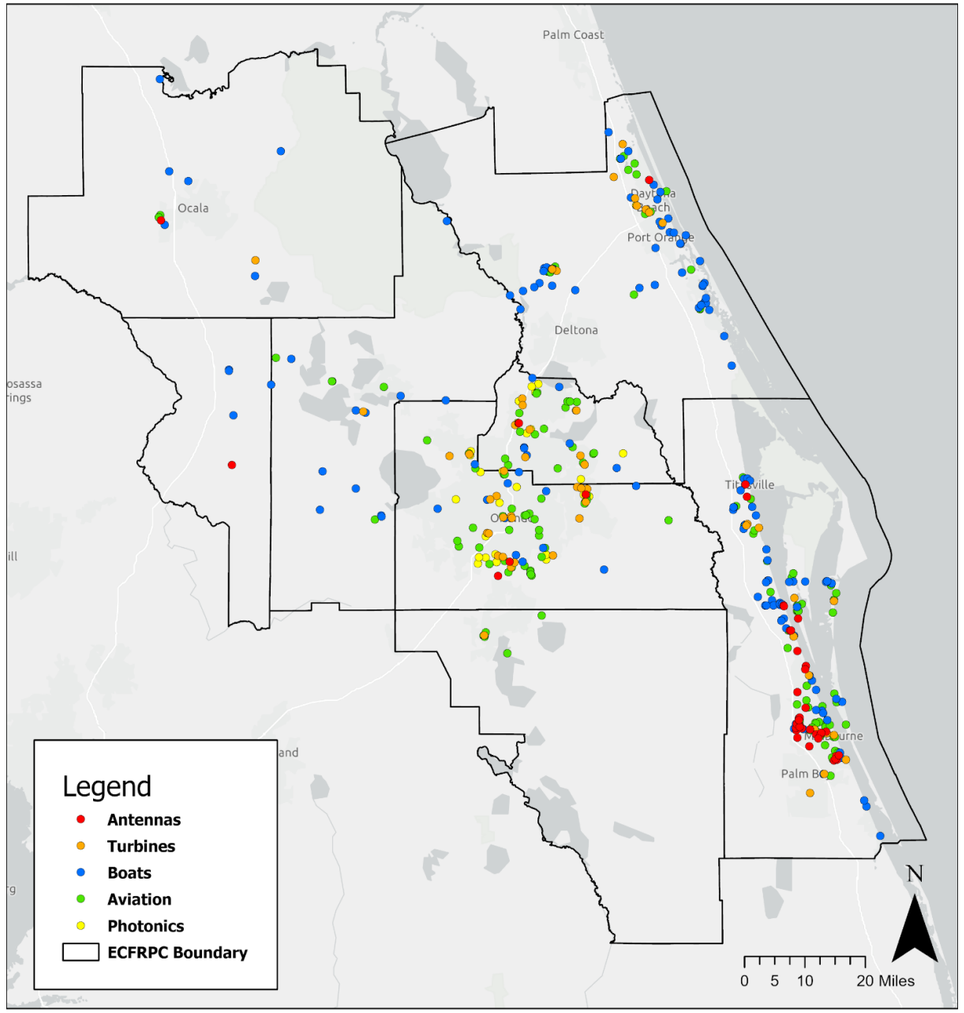
In ECFPRC analysis, "Role" describes the general contribution of a business to the overall industry which includes Design/Manufacturing and Support. Design/Manufacturing involves the direct planning and construction of boats and similar vessels, while Support includes a variety of goods and services that contribute to the successful operation of Boats businesses.

Type is another category established through data analysis that further categorizes Boats establishments into more specific groups. The generalized "Types" used in this analysis are: Custom Parts & Tools, Machinery, Supplier, and Related Services. Machinery includes the direct building of boat craft; Custom Parts & Tools include all specialized parts that are used in the construction and maintenance of boats. Supplier specifies businesses that provide raw materials to the industry.

Lastly, Related Services includes the variety of services that keep the boats industry operating.

The Main Product of an establishment helps to provide insight into the specific material and service contributions of an establishment to the overall Boats industry.

Industry Clusters in East Central Florida



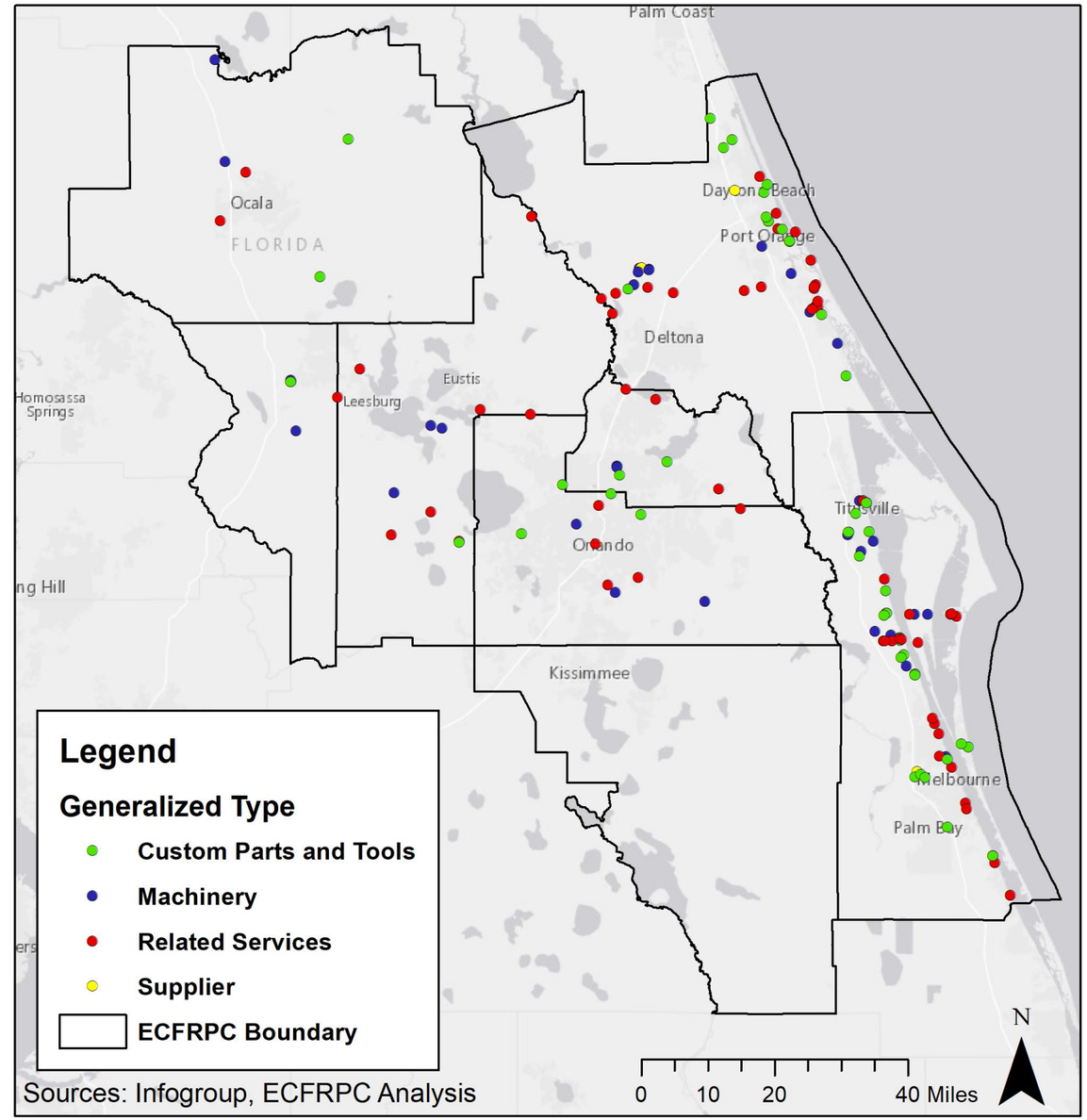
Source: Infogroup

Watercraft

East Central Florida's Watercraft cluster is one of the region's largest industry agglomerations. The location of East Central Florida as a coastal location with additional access to other important navigable waterways including the Indian River Lagoon, St. Johns River, and countless other lakes provides a geographic advantage for the development and sustainment of the watercraft industry. It is comprised of 147 establishments that provide a variety of services within this industry including manufacturers, machine shops and other makers of boat parts and accessories, product suppliers, and marinas that provide repair services, among others. While these businesses are distributed throughout East Central Florida, the vast majority of them are located within Brevard (61) and Volusia (44) counties. Volusia County is home to three of the region's largest boat manufacturers: Boston Whaler, Everglades Boats, and Edgewater Power Boats. Other large employers within this industry include Sear Ray Boats in Brevard County and Regal Marine Industries and Nautique in Orange County.

Regionwide, almost 3,700 people are employed within the Watercraft industry. However, the distribution of jobs in this industry is not evenly distributed. Brevard, Orange, and Volusia counties are the regional leaders in this industry, with roughly 1,200 employees in Brevard and Orange counties and more than 1,000 in Volusia County. The remaining counties in the region provide less than 100 employees each for this industry. The coastal location of Brevard and Volusia County explains the high concentration of Watercraft establishments in these communities. While Orange County is not a coastal county, it serves as the economic center of the Orlando Metropolitan Area and the region as a whole with access to transportation and other supply networks that help to support this thriving industry.

Of the 147 establishments identified, 83 belong to the Design/Manufacturing Role, while the other 64 businesses belong to the Support Role. 60 of the 147 establishments in the region belong to this Related Services Type. 47 belong to Custom Parts & Tools, 36 belong to Machinery, and 4 belong to the Supplier Type. This illustrates the importance of companies that provide important support to those boat manufacturers and owners.



Watercraft Establishments by Generalized Type

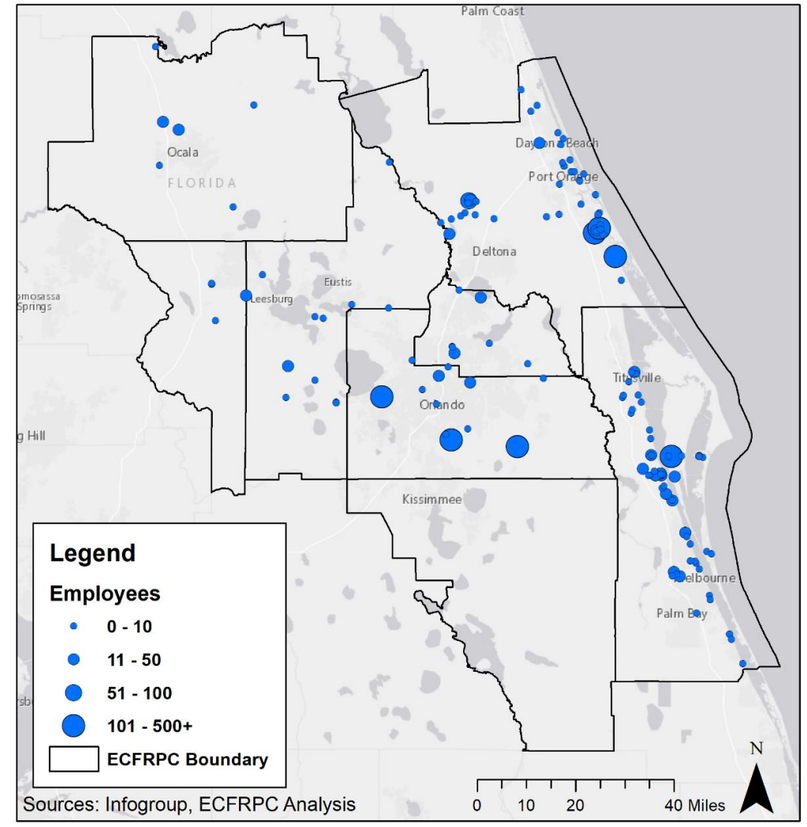
The Main Product of an establishment has been organized by the following categories identified in ECFRPC analysis: Boats, Materials, Other Equipment, Parts

Supplier, and Repair & Services. By this metric, Repair & Services is the most common Main Product produced by Watercraft establishments in the East Central Florida region with 60 businesses belonging to this category. Parts Supplier is the second-most common with 47 of the 147 establishments supplying parts to the regional industry. 33 businesses in the region provide Boats, which is the direct construction of boats and similar craft. Lastly, 4 establishments produce Materials for the Watercraft industry and 3 provide Other Equipment. This data further supports findings from the Role and Generalized Type categorization that a significant portion of the Watercraft industry in the region is comprised of businesses that provide services and parts for the maintenance and construction of boat craft.

Such a large industry has an important economic impact in the East Central Florida region. By combining the output of all Watercraft industry businesses, the economic impact this industry has in the region is just under $800 Million.

The Watercraft Cluster also displays a high level of innovation. It is responsible for 222 patents between the years 2000 and 2015. Multiple patent categories were examined to determine the number of patents produced by the watercraft industry. These include Marine Propulsion, Ships, Fluid Reaction Surfaces, and Buoys, Rafts, & Aquatic Devices. These categories represent almost 7% of all regional patents. Moreover, several of these companies have started to develop other applications for the composites and fiberglass materials used to build boats.

Watercraft Establishments by Employment



Watercraft Patents

Watercraft		
Patent Categories	# of Patents 2000-2015	Percentage of Regional Patents
Buoys, Rafts, and Aquatic Devices	14	0.43%
Marine Propulsion	39	1.19%
Ships	75	2.29%
Fluid Reaction Surfaces (i.e., Impellers)	94	2.87%
Total	222	6.77%

Source: US Patent & Trademark Office

Aviation

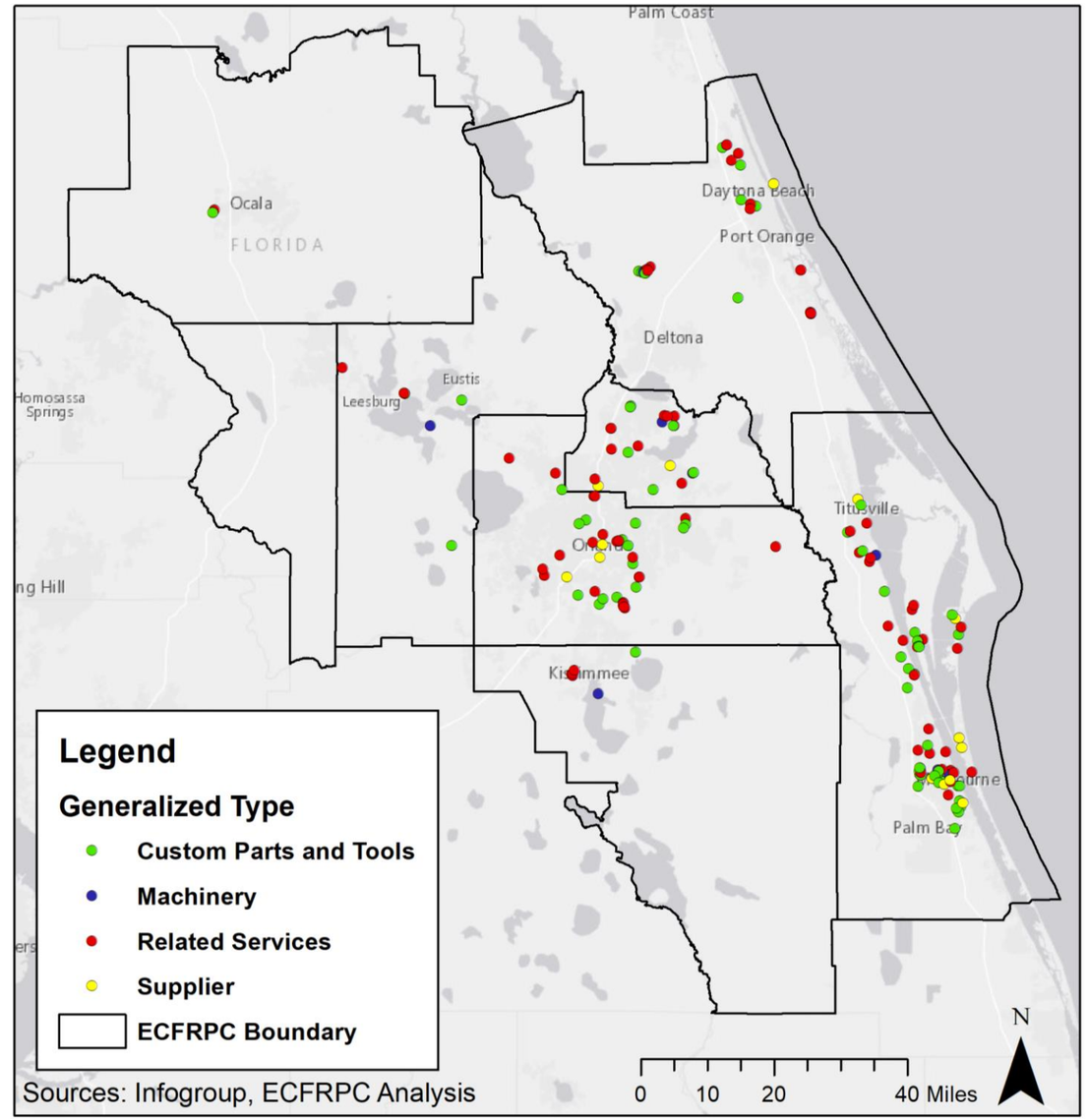
East Central Florida has a significant presence in the aviation industry and is home to more than 180 aviation companies. For the purpose of this analysis, the aviation cluster includes all establishments that manufacture aircraft, avionics instruments and other airplane parts, software and navigation tools, and related services. The main goal of the industry cluster analysis is to identify businesses that serve aircraft directly and indirectly. The heart of East Central Florida's aviation cluster is Brevard County, which has over 75 aviation establishments. Not only is the Space Coast home to Kennedy Space Center, it also hosts large facilities for companies such as Boeing, Embraer, and Collins Aerospace, among others. There are also several aviation companies located within Orange (42) and Volusia (33) counties. The region is also home to the Florida Institute of Technology (FIT) and Embry Riddle Aeronautical University (Embry Riddle), two of the nation's premier aviation and aerospace training institutions.

In total, over 6,030 people are employed in the aviation industry cluster within the East Central Florida region. As with the total number of establishments, Brevard County is the regional leader with around 4,000 jobs in this industry. However, while Brevard establishments comprise less than half of the entire region, aviation employment in Brevard County is two-thirds of the total employment for this industry in the East Central Florida region. This can be explained by the presence of large nationally-recognized aviation companies that hold a larger share of the industry, including Collins Aerospace and Embraer which each employs large numbers of people.

Aviation and aerospace-related businesses provide a variety of goods and services that are necessary for the complex components, maintenance, and operation of aircraft. Of the 184 aviation-related establishments in East Central Florida, 103 of them are in the support role. This includes a variety of suppliers of materials and software, repair & maintenance, and other services. The remaining 80 establishments belong to the design role, which includes the manufacturing of aircraft as well as custom parts and tools.

Establishments were also organized by Generalized Type, which include Custom Parts & Tools, Machinery, Related Services, and Supplier. Of the 183 aviation establishments in East Central Florida, Related Services is the most common

Aviation Establishments by Generalized Type



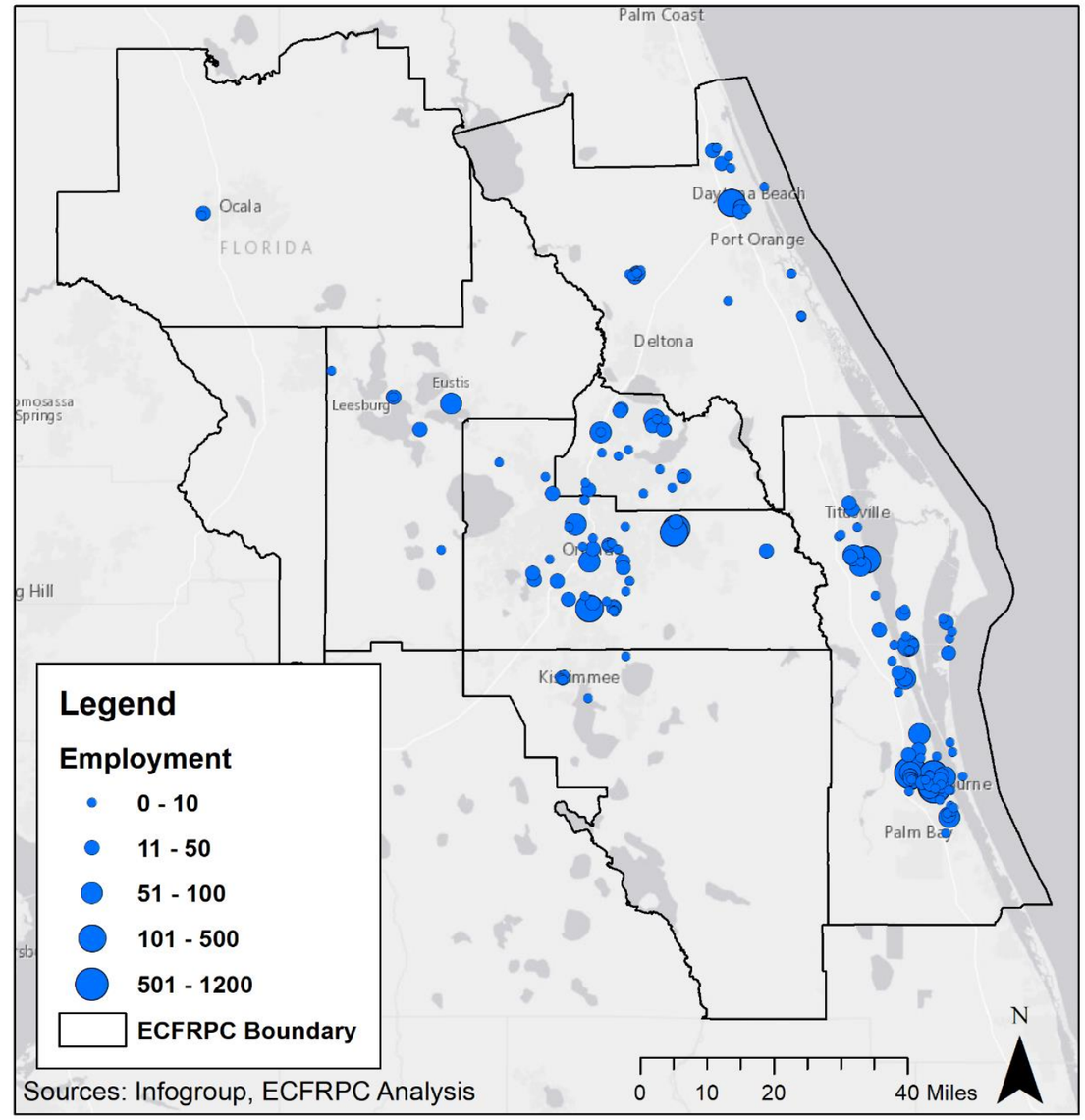
Sources: Infogroup, ECFRPC Analysis

Generalized Type with 89 establishments. Custom Parts & Tools is the second most common with 71 establishments. 14 establishments are Suppliers and 9 establishments belong to the Machinery category. The high proportion of businesses that provide Custom Parts & Tools can be attributed to the complexity of aircraft and supporting service needs, which can be comprised of hundreds to thousands of precise parts that often need to be crafted for individual needs.

Another useful method of categorizing establishments in the aviation industry is by considering the main product produced by various businesses. For the aviation cluster analysis, the ECFRPC categorized the product produced by businesses into 7 categories, which are: Aircraft, Association, Materials, Other Equipment, Parts Supplier, Repair & Services, and Software. Repair & Services is the most common product for aviation establishments in East Central Florida with 88 businesses providing these types of products. 71 establishments in the region belong to the Parts Supplier category, which mostly provides custom parts and tools for aircraft and other infrastructure in the aviation industry. 9 establishments produce Software, 7 produce Aircraft directly, 5 businesses provide raw materials, 2 produce Other Equipment and only 1 establishment in the region is primarily an Association. It is important to note that this categorization conducted by the ECFRPC considered the main product of a business, or which product is the primary focus of the company. Many establishments may provide a wide variety of products and services. Boeing is an example of one company that provides a wide variety of services. In these circumstances, the ECFRPC conducted research to determine the primary product produced at that specific location with assistance from Infogroup data as well as information provided on business websites.

Sales and output can provide significant insight into the economic impact of a particular industry in the East Central Florida region. Total sales for each establishment were used to determine the output of the industry. In total, the output of all aviation establishments in the region is over $2.3 Billion.

Aviation Establishments by Employment



Sources: Infogroup, ECFRPC Analysis

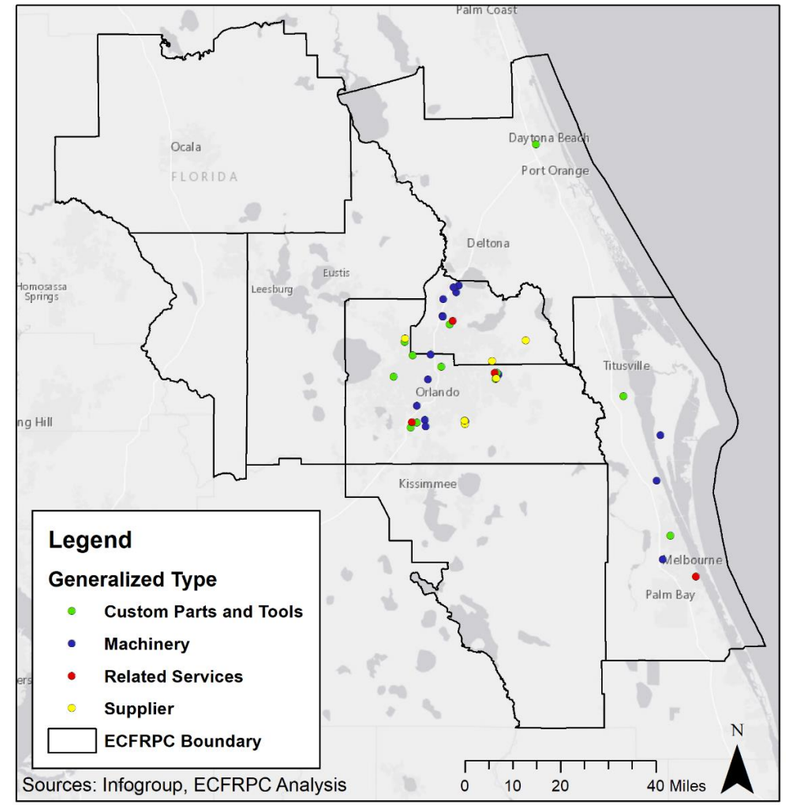
Photonics

Photonics is the science of harnessing particles of light for a wide variety of technological applications including lasers, sensors, and other medical instruments that have a wide variety of uses and applications. In 1987 UCF started the Center for Research and Education in Optics and Lasers, which less than 20 years later became the College of Optics and Photonics. Because of this effort, today East Central Florida has one of the largest Photonics clusters in the nation. Also included in this cluster are lasers and it is comprised of over 39 companies located within Brevard, Orange, and Seminole, and Volusia counties. Orange County contains the highest number of Photonics establishments by a wide margin with 22 businesses located within the county. Seminole County has the second largest number of Photonics establishments with 10 of 39 total. Brevard County has 6 Photonics establishments, and Volusia County currently has only 1 establishment within the Photonics cluster. Most of these establishments are defense companies or produce other machines that use laser technologies.

Across the East Central Florida region, over 925 individuals are employed at businesses within the Photonics cluster. While total employment does not compare to the large figures seen in the Boats and Aviation clusters, concentrations of employment within the region can still be identified. Orange County has 497 people employed in Photonics, which is more than half of the total region-wide employment figure. Seminole County also has a significant number of Photonics employees with 324 people. While Seminole County has just under one-fourth of the total number of Photonics establishments, it contains more than 35% of all regionwide employment. This points to the heavy weight the existing Photonics businesses in Seminole County have in terms of employment. Brevard County has 62 employees in this industry, and Volusia County has 43 people working in this industry.

The Role of Photonics related businesses was examined in ECFRPC analysis to better understand the overall contribution of businesses in the Photonics industry cluster. The two roles identified are Design/Manufacturing and Support. The Support role includes a variety of suppliers of materials and software, repair & maintenance, and other services. On the other hand, Design/Manufacturing describes businesses that are directly involved in the planning and construction of Photonics technology. Of the 39 identified establishments, 29 belong to the Design/Manufacturing role and 10 belong to the support role. In this aspect, the Photonics cluster is more dependent on

Photonics Establishments by Generalized Type



Photonics Patents

Photonics		
Patent Categories	# of Patents 2000-2015	Percentage of Regional Patents
Active Solid-State Devices	215	6.56%
Arithmetic Processing	25	0.76%
Coating Processes	45	1.07%
Abrading	59	1.40%
Geometrical Instruments	69	1.64%
Liquid Crystal Cells, Elements and Systems	55	13.10%
Optical Communications	76	1.80%
X-Ray or Gamma Ray Systems or Devices	30	0.71%
Total	574	13.62%

Source: US Patent & Trademark Office

Design/Manufacturing firms, especially compared to the Aviation cluster which places a large emphasis on the Support role.

The categories of "Generalized Type", which further categorizes Photonics businesses are Custom Parts & Tools, Machinery, Related Services, and Supplier. With 17 of the 39 establishments, Machinery is the most common generalized type. Machinery includes the direct building and construction of Photonics instruments and technologies. 12 establishments belong to Custom Parts & Tools, 6 businesses are Suppliers, and the remaining 4 belong to the Related Services type. This differs significantly from the Boats and Aviation clusters, in which Related Services is the most common generalized type. This can be attributed to the complex operational needs of the previous two clusters as well as the precise design and assembly needs of the Photonics industry.

Main Product is an even more detailed view and categorization of Photonics businesses and examines what each establishment produces for the overall industry cluster. The categories created for Main Product in ECFRPC analysis are Association, Laser, Materials, Other Equipment, Parts Supplier, Repair & Services, Software, and Weaponry. The most prevalent Main Product in the Photonics cluster is tied between Other Equipment and Parts Supplier with 9 each. Both of these products are crucial in the manufacturing of complete photonics instruments. Lasers is close behind with 8 establishments and describes the direct construction and manufacturing of laser instruments. 5 establishments produce Materials, Repair & Services contains 3 establishments, and Weaponry has 3 establishments as well. Only 1 business is an association and only 1 establishment produces Software for the Photonics industry.

Total sales of the Photonics industry cluster give further insight into the economic impact of this industry across the East Central Florida region. Through identifying the output of every Photonics related establishment in the region, the total economic impact of this industry exceeds $122 Million.

These companies were awarded 574 patents between 2000 and 2015. As a diverse industry, many patent categories were analyzed to find the overall patent contribution of the Photonics industry. Over 13% of all regional patents can be attributed to those in the Photonics industry.

Regional Case Study: Osceola County

Osceola County has partnered with the Belgian nanotechnology research firm Imec and locally-based telecommunications firm Harris to develop a high-tech research facility, called Bridging the Innovation Development Gap (BRIDG). The 109,000 square-foot facility will be housed in the Florida Advanced Manufacturing Center just outside of Kissimmee city limits, in an area currently being branded as "Neo City". The construction project alone costed more than $70 million, with $15 million from state funding. The organization will employ over 50 people and Imec has committed to inserting at least 100 of its high-tech employees to the newly-completed facility in the next five years. This project was the recipient of a $100K EDA Good Jobs Challenge Grant last year.

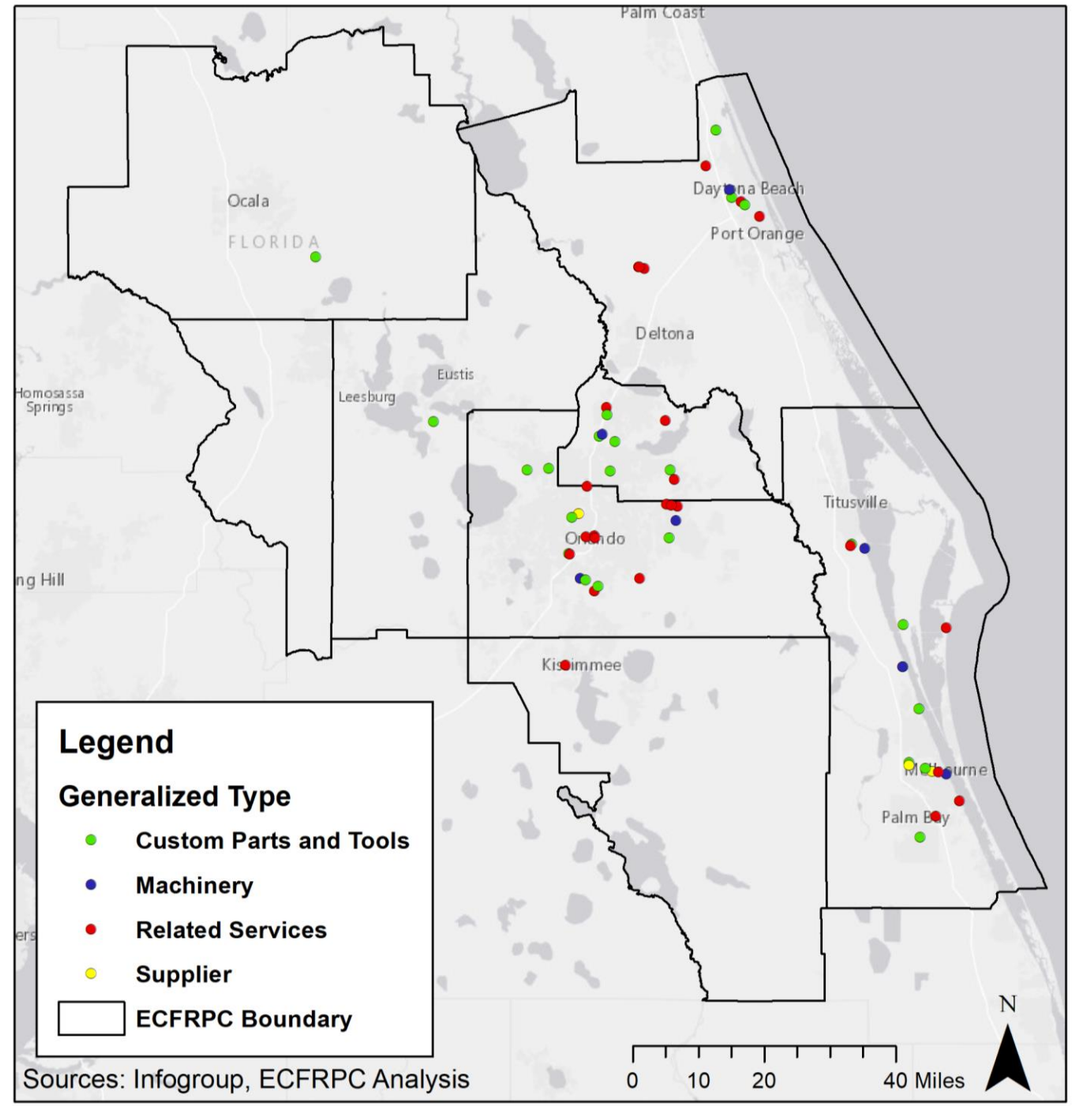
Turbines

The convergence of technologies developed by the region's gas turbine and aircraft industries led to the origin of East Central Florida's turbine cluster. Today, the technologies developed by these industries have a variety of applications including aerospace propulsion, clean power generation, and oil and gas exploration. East Central Florida has 59 companies that work in the design, development, and servicing of turbines including two company headquarters: Siemens Energy (Orlando) and Mitsubishi Power Systems (Lake Mary). Orange County is the regional leader in the Turbine industry with 22 of the 59 establishments located in the county. Brevard County also has a significant number of Turbine-related establishments with 17. Due to the high concentration of Aviation businesses in Brevard County, it is logical that several Turbine industries would also locate in the county to access an industry cluster that often utilizes turbines. Volusia County has 10 turbine establishments. Seminole County has 7 businesses in this cluster. Lastly, Lake, Marion, and Osceola counties have 1 establishment each. The cluster also shows a high level of innovation. Other patent technology classes associated with this cluster are Power Plants, Electric Generator, and Impellers.

After examining employment numbers for all Turbine businesses across the region, it is determined that 2,804 people are employed in this important industry cluster in the 8-county region. Surprisingly, Brevard County is the regional leader in terms of employment with over 1,080 people despite having the second highest number of establishments. Orange County employs 726 people in Turbine related businesses. Seminole County also has a relatively large number of people employed in the Turbine industry at 629, which is despite the low overall number of establishments in the county. However, this can be attributed to the presence of Mitsubishi Power Systems which is headquartered in Lake Mary. Next, Volusia County has 277 employees working in the Turbine industry cluster. Lake County has 51 employees, Osceola County has 35 employees, and Marion County only has 3 people employed in Turbines.

As determined through ECFRPC data analysis, the Role of an establishment in an industry cluster illustrates the overall contribution of a business to the Turbine industry cluster. The categories of Role used to classify Turbine establishments are

Turbines Establishments by Generalized Type



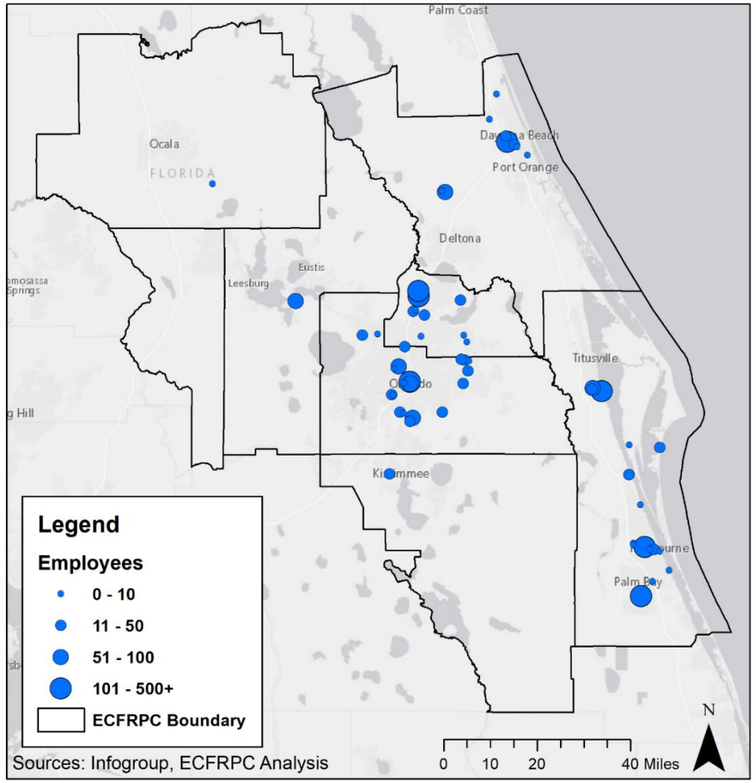
Design/Manufacturing, Global Headquarters, and Support. Design/Manufacturing is the direct planning and construction of turbines themselves, to which 30 of the 59 Turbines establishments belong. Support includes a variety of goods and services that facilitate the Turbine industry but typically is not involved in the direct building of turbines. 28 establishments belong to the Support Type. Lastly, one establishment serves as a global headquarters for a Turbine company which is the previously mentioned Mitsubishi Power Systems in Lake Mary.

The categories of "Generalized Type", which further categorizes Photonics businesses are Custom Parts & Tools, Machinery, Related Services, and Supplier. The largest share of establishments belongs to the Related Services Type with 25 businesses. Custom Parts & Tools is the second most common with 23 establishments across the region. The Machinery Type, which includes the direct construction of turbines, contains 8 businesses. Lastly, 3 of the 59 establishments in East Central Florida belong to the Supplier Type, which generally includes a variety of raw materials needed for the industry overall. These data point to the importance of businesses that provide a wide range of services and goods that play a role in the planning and building of turbines while not directly building the turbines, especially when considering that only a minority of establishments are involved in the direct building and assembly of turbines.

Main Product is an even more detailed view and categorization of Turbines businesses and examines what each establishment produces for the overall industry cluster. The categories of Main Product in the Turbines industry cluster are Other Equipment, Parts Supplier, Repair & Services, Software, Turbines, and Weaponry. The two most common Main Product for establishments in this industry cluster are Parts Supplier (25) and Repair & Services (22). 7 establishments belong to Turbines, 3 belong to Software, and one establishment each belongs to Other Equipment and Weaponry. This further supports the finding that the Turbines industry cluster is heavily reliant on businesses providing parts and services needed in order to manufacture turbines.

The economic impact of the Turbines cluster in the East Central Florida region has been calculated to be more than $1.36 Billion across the 8-county area. This is determined by finding and summating the total output for all identified establishments in the Turbines industry cluster. Over 600 patents were awarded regionally for this industry between the years 2000 and 2015.

Turbines Establishments by Employment



Turbines Patents

Turbines		
Patent Categories	# of Patents 2000-2015	Percentage of Regional Patents
Electricity: Single Generator Systems	11	0.34%
Fluid Reaction Surfaces (i.e., Impellers)	94	2.87%
Rotary Kinetic Fluid Motors or Pump	136	4.15%
Railways	13	0.40%
Power Plants	264	8.06%
Electrical Generator or Motor Structure	97	2.96%
Total	615	18.77%

Source: US Patent & Trademark Office

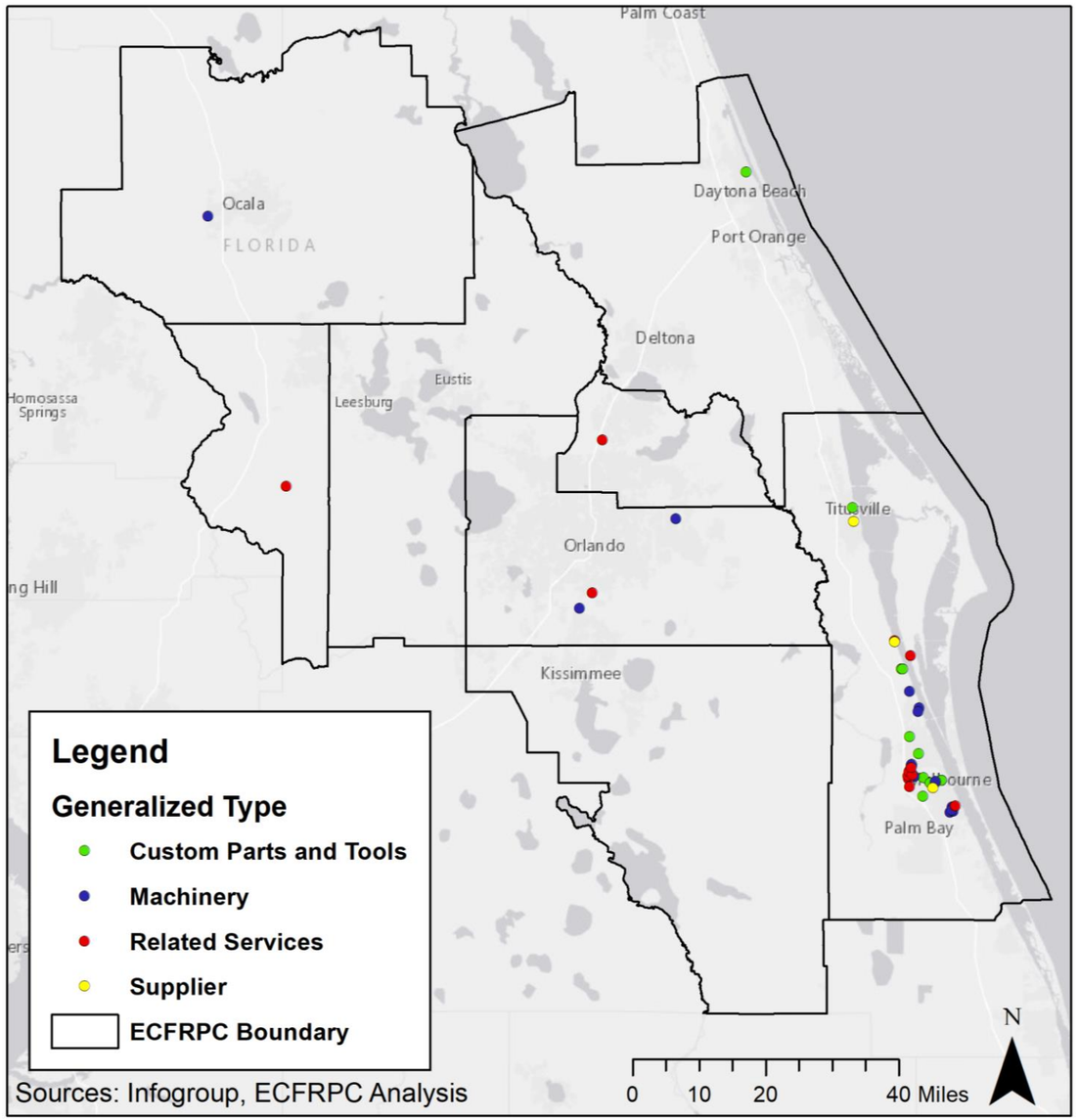
Antennas

Companies and establishments within the Antennas industry cluster work on a variety of technologies including RFID communications, digital communication systems, and a variety of antenna and receiver designs. Antennas also play a vital role in countless industries and applications, especially in telecommunications. This cluster is comprised of 45 establishments across the 8-county region. Of this total, 38 of them are located in Brevard County. There are only 3 establishments in Orange County, 2 in Volusia County, and one establishment each for Marion and Seminole Counties. No establishments were found in Lake, Osceola, and Sumter counties. Of the 5 industry clusters examined for analysis at the ECFRPC, the Antennas cluster has the most uneven distribution of establishments in the region. No other cluster studied has such a large majority of businesses within the cluster located within a single county. However, this is not surprising as Palm Bay is home to Harris Corporation's company headquarters. The 464,000 square-foot building housed over 1,400 scientists and engineers.

While the bulk of this activity is concentrated in Brevard County, the development of innovative communication technologies spans throughout the region. According to the U.S Patent Trademark office, the East Central Florida region was awarded 1,113 patents in communication technology classes such as Multiplex Communications, Radio Wave Antenna, Pulse or Digital Communications, among others. Patent awards were distributed among all metropolitan areas, which leads the ECFRPC to believe that several of the region's defense companies may also be involved within this cluster.

Across the 8-county East Central Florida region, over 1,480 people are employed at businesses within the Antennas industry cluster. As expected based on the number of establishments, Brevard County has the highest number of employees in this cluster with 810. One surprising finding was that Volusia County has over 500 employees in this industry despite only having 2 establishments. This can be attributed to Metra Electronics in Holly Hill, which alone has almost 500 employees. Next in line, Orange County has 125 people employed in the Antennas cluster. 35 people are employed in this industry cluster in Marion County, and 7 are employed in Seminole County.

Antennas Establishments by Generalized Type



Sources: Infogroup, ECFRPC Analysis

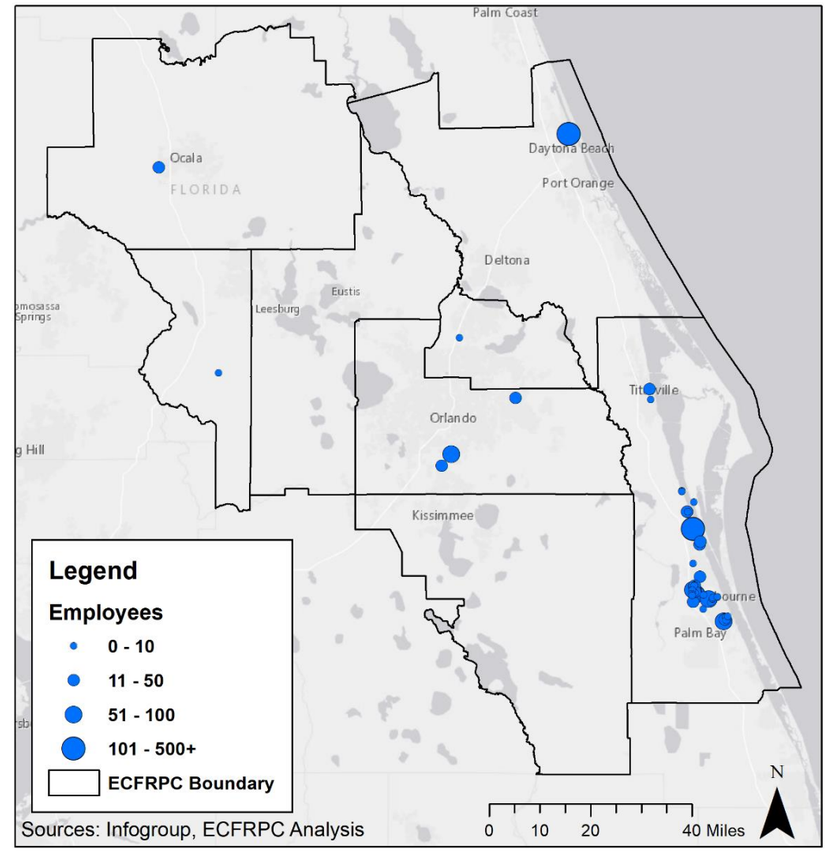
The Role of an establishment in an industry cluster illustrates the overall contribution of a business to the Antennas industry cluster. The categories of Role used to classify Antennas establishments are Design/Manufacturing and Support. Of the 45 establishments identified by the ECFRPC as a part of the Antennas industry cluster, 29 belong to the Design/Manufacturing Role and 16 belong to the Support Role. In this regard, the Antennas industry cluster is similar to the Photonics cluster, in which Design/Manufacturing firms are more prevalent as opposed to Aviation which places much greater emphasis on the Support Role.

The categories of "Generalized Type", which further categorizes Antenna businesses are Custom Parts & Tools, Machinery, Related Services, and Supplier. Custom Parts & Tools is the most common Type with 15 establishments belonging to this category and signifies businesses that provide a range of small parts, pieces, and other necessary equipment needed for the manufacture of antennas. However, this Type does not include the direct manufacture of antennas. Machinery and Related Services are close behind with 14 and 13 establishments, respectively. Machinery includes those businesses that directly manufacture antennas. Lastly, 3 establishments belong to the Supplier Type. Suppliers provide a variety of raw materials and items essential for the physical construction of antennas.

Main Product is an even more detailed view and categorization of Antennas establishments and examines what each business produces for the overall industry cluster. The categories of Main Product in the Turbines industry cluster are Other Equipment, Parts Supplier, Repair & Services, Software, Antennas, and Materials. The most prevalent Main Product in the Antennas industry cluster is Parts Supplier with 15 establishments. These firms are crucial as antennas are often comprised of many small and specialized parts oftentimes not produced by the antenna manufacturer directly. Antennas and Repair & Services both have 13 establishments each. 2 establishments produce Software. Lastly, both Materials and Other Equipment have one establishment each.

By examining the total output of all businesses and establishments identified as a part of the Antennas industry cluster, the regional economic impact this industry has on the 8-county region is found to be over $1.36 Billion, which is the second highest of the 5 industry clusters studied behind Aviation.

Antennas Establishments by Employment



Sources: Infogroup, ECFRPC Analysis

Antennas Patents

Antennas		
Patent Categories	# of Patents 2000-2015	Percentage of Regional Patents
Multiplex Communications	443	13.52%
Wave Transmission Lines and Networks	31	0.95%
Communications: Directive Radio Wave Systems	150	4.58%
Communications: Radio Wave Antenna	309	9.43%
Pulse or Digital Communications	180	5.49%
Total	1113	33.96%

Source: US Patent & Trademark Office

Tourism

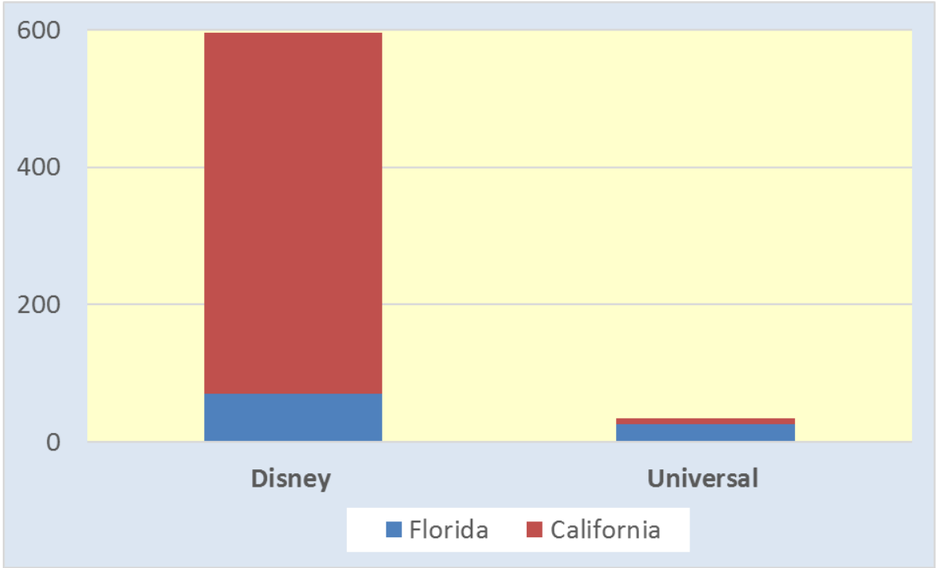
Tourism is by far the region's largest and most comprehensive cluster. It hosts a wide-ranging network of industries such as theme parks, accommodations, transportation (air and ground), travel arrangement services, among others. East Central Florida communities offer a multiplicity of experiences to visitors coming from other parts of the country and the world. The epicenter of tourist activity is Metro Orlando, which recently became the nation's most visited destination with 68 million visitors in 2016. East Central Florida's success is predicated by the high number of innovative technologies and experiences developed by the theme park companies to improve the overall guest experiences. These include the creation of new rides, themed environments, and reservation wrist-bands.

Based on ECFRPC research, most of the theme park patents were awarded to the companies' California headquarters. However, having the most visited theme parks in the nation makes Orlando the main focus market for most of these technologies.

Best Practices: I-Drive Economic Impact Analysis

Home to the Orange County Convention Center and six of the world's most visited theme parks, the International Drive Resort Area is one of the regions' most important economic hubs. In 2016 and forward, the ECFRPC completed the I-Drive Economic Impact Analysis, the first study that attempts to estimate the economic value of a place in Metro Orlando. Among many things, staff developed a methodology to calculate the number of visitors coming to I-Drive annually and their total spending. This information was then entered into the REMI PI+ model to calculate the impact of the resort area on both Orange County and the Metro Orlando economies. Among many things, the study found that I-Drive visitor spending accounts for 11% of all Orange County jobs.

Number of Patents Awarded to Theme Park Companies by State



Tourism		
Patent Categories	# of Patents 2000-2015	Percentage of Regional Patents
Amusement Devices	29	0.88%
Total	29	0.88%

Source: U.S. Patent and Trademark Office

Creation of Themed Lands at Disney and Universal

Modeling Simulation and Training (MS&T)

Another cluster that has benefited from its partnership with UCF is the Modeling Simulation and Training Industry. The ECFRPC was able to identify 184 companies, the vast majority of which are located near the university's Central Florida Research Park. This MS&T cluster's genesis occurred in the mid-1960s when the Naval Training Systems Center moved to Orlando from Long Island, NY. Besides being home to over 100 companies, Central Florida Research Park is also the location of several supporting establishments like the Joint Training Integration and Evaluation Center, the National Center for Simulation, and UCF's Institute for Simulation and Training.

MS&T companies specialize in providing training services for the different branches of the U.S. military. However, the industry has started to branch out to supply services to other sectors including aviation, entertainment, medical technologies and transportation. The ECFRPC was able to identify about 50 technology patents associated with this cluster.

Model & Simulation Patents

Model & Simulation		
Patent Categories	**# of Patents 2000-2015**	**Percentage of Regional Patents**
DP: Structural Design, Modeling	**38**	**1.16%**
Arithmetic Processing	**25**	**0.76%**
Total	**63**	**1.92%**

Source: US Patent & Trademark Office

Impacts of Florida Modeling, Simulation and Training -Research Report

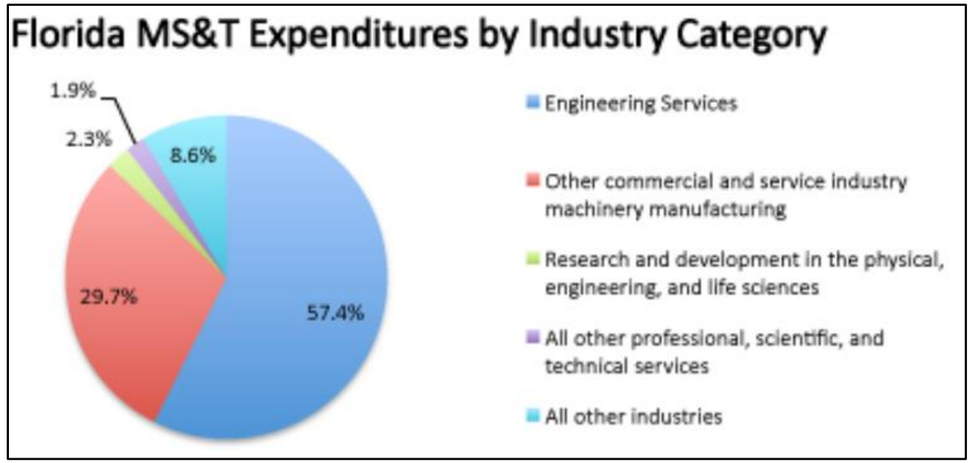
"*The Impacts of Florida Modeling, Simulation and Training - A Research Report Sponsored by the Florida High Tech Corridor Council for the National Center for Simulation*" is a 2012 report that gives an in-depth summary on the impacts of Florida's modeling, simulation, and training (MS&T) sector. The report also covers the impacts to the United States military capability, to our nation's health and medicine, and to society and education. This report was commissioned by the National Center for Simulation under support by the Florida High Tech Corridor Council, Inc.

The MS&T sector directly employs more than 27,000 jobs with an average approximate annual salary of $69,797. In 2011 the MS&T sector contributed more than 60,700 jobs (direct, induced and indirect) to Florida's economy, more than $4.8 billion to Florida's Gross State Product, and nearly $8 billion in state sales (economic output) activity.

According to the report, the US Military relies on Florida's MS&T. For example, a majority of soldiers have been trained on systems developed in Florida. These systems have helped US soldiers to be better prepared than ever before, resulting in the lowest levels of reported injuries and casualties than in any prior engagement.

Florida also hosts the leading national conference on medical simulation, and has been at the forefront of medical innovation for remote surgery, doctor education, trauma response and training, and medical research. Florida technologies have developed some of the first patient and trauma simulators, and Florida researchers are continuing to be at the forefront of medical science that will have global future impact such as Telesurgery and Automatic Surgery.

Florida is a leader in the development and innovation in the field of gaming, one of the most exciting areas of growth and collaboration between the military and the private sector. UCF's Florida Interactive Entertainment Academy (FIEA) provides a master's level degree for students going into the interactive entertainment / gaming industries. Full Sail University and the Digital Animation and Visual Effects (DAVE) School also are based in the Orlando region and offer degrees in animation and aspects of game design. Orlando is home to the annual Defense Gametech User's Conference as well.



Source: Impacts of Florida MS&T Report, Tucker/Hall

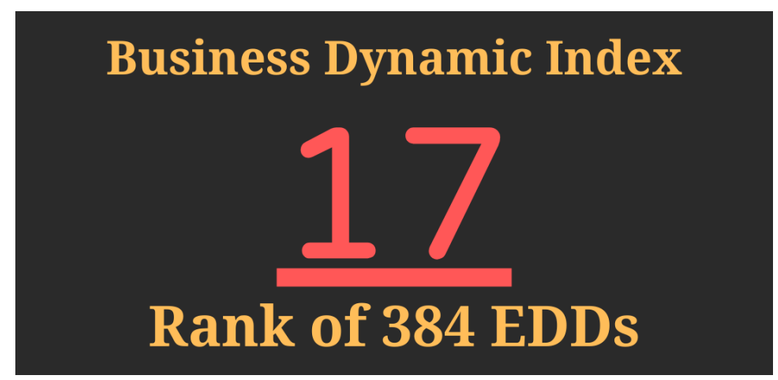
Measuring East Central Florida's Innovation and Economic Competitiveness

The Economic Development Administration's Innovation Index is a composite measure that ranks the nation's 384 economic development districts based on a variety of economic indicators. East Central Florida's economic dynamism is reflected in its high rankings on the Business Dynamics (17th) Business Profile (44th), and Employment and Productivity (130th) indexes. These are all explained in more detail below.

The Business Dynamics Index assesses the region's creative destruction process where old inefficient firms are replaced with new innovative ones. The creation of new establishments stimulates competition and encourages older firms to ditch inefficient practices, which drives overall economic growth. This major index is comprised of two measurements:

- **Establishment Formation and Dynamics**: These includes total new business locations, share of new export businesses to total establishments, total new jobs created by these businesses, and changes in the rate of business formation overtime. It also takes into account the ratio of businesses that are increasing employment against those businesses that are reducing employment, the degree to which new businesses are replacing failed businesses, and the balance between export and local businesses.

- **Venture Capital**: This refers to the amount of capital available to commercialize new technologies and expand innovative companies. According to the Indiana Business Research Center, venture capital may be responsible for up to 14% of all innovative output activity in the nation. This measurement looks at the average amount of venture capital to all companies, expanding enterprises, and high-tech firms. In addition to these figures, it also considers the total number of initial public offerings (IPOs) and venture capital deals that regions negotiated. All These figures were averaged over ten years and scaled by the region's average gross development product over that period. Finally, the index also measures trend changes in venture capital financing and capital deals.



The Business Profile Index gauges the region's business structure and the resources available to entrepreneurs such as foreign capital and broadband connectivity. The measurements are described in more detail below:

- **Foreign Direct Investment Attractiveness**: This measurement assesses how enticing the region is to attracting new capital from both foreign and domestic investors from outside the region. It calculates the ratio of new employment created by these investments and the average dollars brought to the region.

- **Online Connectivity:** This includes broadband density (fixed high-speed internet connections per 1,000 residents) and penetration (average annual change on fixed connections).

- **Dynamic Industry Profile:** This measurement calculates the average number of small (less than 20 employees) and large (500 or more employees) firms from 2002 to the present. It also takes into account the relative youth of the region's high-tech firms by comparing it to the national average.

- **Proprietorship**: This measurement captures the ownership aspect of entrepreneurship by looking at the regional rate of business proprietors and the changes in proprietorship rate. It also compares proprietor earnings (entrepreneur income) to total wages and salaries (employee income) and calculates total access to capital.

Business Profile Index

Measurements

- Foreign Direct Investment Attractiveness
- Online Connectivity
- Dynamic Industry Profile
- Proprietorship

Business Profile Index

44

Rank of 384 EDDs

The Employment and Productivity Index describes economic and job growth, regional desirability, and the outcomes of innovative activity by focusing on the following measurements:

- **Job Growth to Population Growth Ratio**: Calculates whether employment has been rising faster than population growth (2002 to the present).

- **Change in Share of High-Tech Industry Employment**: Home-grown, high-tech firms are important for region's economic growth. This measurement quantifies the degree in which the selected area's high-tech jobs are increasing or declining in concentration or importance.

- **Industry Performance**: This measurement examines the region's industry clusters by focusing on their diversity (spread of industries), strength (level of dominance of particular industries) and growth factor (percentage of employment growth that can be attributed to the selected industry clusters).

- **Gross Domestic Product (GDP):** This productivity measurement is comprised of the economic output per worker (for a single year) and the change in GDP per worker from 2002 to the most current information available.

- **Patents**: The Employment and Productivity Index quantifies a variety of patent-related measures including the change in (average) patenting rate, which compares the three-year average of patents per 1,000 workers at the beginning of a ten-year time frame to the most recent three-year average. Another factor is patent diversity, which compares the diversity of patent making in the region to the national score for the latest three years available. Finally, the patents by institution-type categorizes the number of patents for five institution types, from individuals to companies to government.

Employment and Productivity Index

Measurements

- Job Growth
- Change in Share of High Tech Employment
- Industry Performance
- Gross Domestic Product
- Patents

Employment and Productivity Index

130

Rank of 384 EDDs

Moving Towards a Resilient Economy

Based on the results of this trends analysis, East Central Florida is a dynamic economy that has continued to add jobs at a robust pace. Most changes to the region's economic structure could be attributed to the national economy's "creative destruction" process which drove job losses because of heightened competition, one-time events, and changing consumer tastes. On the other hand, these national trends also solidified employment growth in food and accommodation services, health care, and corporate subsidiary industries. According to the REMI forecast, economic growth is expected to continue over the next 25 years driven by the Professional and Business Services, Leisure and Hospitality, and the Educational and Health Services economic super sectors.

Probably the biggest weakness of East Central Florida's economy is its high reliance on the Leisure and Hospitality sector and its associated industries. According to EDA's Innovation Index, this strong dependence on service jobs is affecting the region's productivity levels and the economic well-being of its residents. This finding is also supported by United Way's ALICE report which states that 42% of East Central Florida's households live paycheck to paycheck.

On the positive side, this analysis also shows that East Central Florida is home to several competitive high technology clusters that offer great opportunities to further diversify the region's economy. These regional innovation clusters are Boats and Other Vessels, Aviation, Photonics, Modeling Simulation and Training, Turbine Technologies, and Antennas and Telecommunications. While innovation seems to have taken a hold on the region's economy, there needs to be a stronger connection between the research activities of the region's academic and private sectors.

Economic-Trend Analysis Major Highlights

STRENGHTS:

- Strong Job Growth
- Growing Innovation Economy
- Strong Technology Clusters

WEAKNESSES:

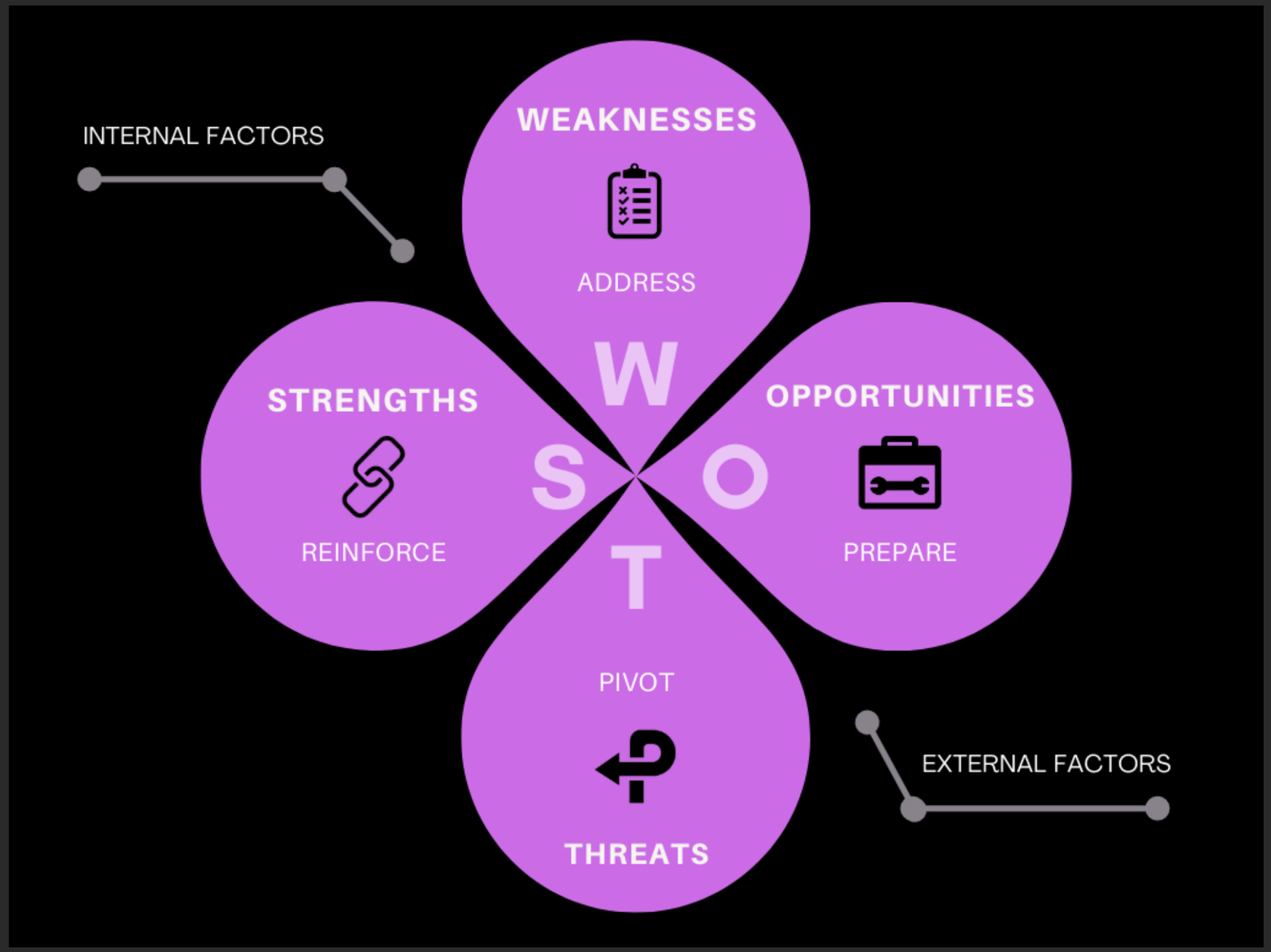
- High Dependence of Tourism
- Low Patent Activity Numbers
- Academia/Private Sector Disconnect

Full Index Category Chart for the Innovation Index Measures based on July 2022 data.

Index Categories	Index Value	Highest Ranked Measures	Comparison
Headline Innovation Index	134	29	High
Human Capital and Knowledge Creation	139.2	42	High
Educational Attainment	134.1		Moderate
High School Attainment	114.6		Moderate
Some College Attainment	86.3		Low
Associate's Degree Attainment	170		High
Bachelor's Degree Attainment	164.3		High
Graduate Degree Attainment	135.1		Moderate
Knowledge Creation and Technology Diffusion	116.5		Moderate
Patent Technology Diffusion	110.1		Moderate
University-Based Knowledge Spillovers	123		Moderate
STEM Education and Occupations	110.6		Moderate
Average STEM Degree Creation (per 1,000 Population)	50		Low
Technology-Based Knowledge Occupation Clusters	111.6		Low
Average High-Tech Industry Employment Share	170.3	49	High
Average Prime Working-Age Population Growth	195.7	16	High
Business Dynamics	160.4	17	High
Establishment Formation	154		High
Traded Sector Establishment Births to All Establishment Ratio	192.7		High
Jobs Attributed to Establishment Births to Total Employment Ratio	187.3		High
Change in Establishment Births to All Establishment Ratio	106		Moderate
Average Small Establishments (per 10,000 Workers)	88.9		Low
Average High-Tech, Early-in-Life-Cycle Establishment Ratio	195	24	High
Establishment Dynamics	166.9		High
Jobs Attributed to Establishment Expansions to Establishment Contractions Ratio	161.4		High
Establishment Births to Deaths Ratio	176	17	High
Traded Sector Establishment Births to Deaths Ratio	163.3		High
Business Profile	120	44	High
Venture Capital Dollar Measures	120.9		Moderate
Average Annual Venture Capital (scaled by GDP)	122		Moderate
Average Annual Expansion Stage Venture Capital (scaled by GDP)	117.6		Moderate
Average Annual High-Tech Industry Venture Capital (scaled by GDP)	126		Moderate
Change in Average Venture Capital	118		Moderate
Venture Capital Count Measures	96.7		Moderate
Average Initial Public Offerings (scaled by GDP)	50		Low
Average Annual Venture Capital Deals (scaled by GDP)	135.3		Moderate
Change in Average Venture Capital Deals	104.9		Moderate
Foreign Direct Investment Attractiveness	123.4		Moderate
FDI Employment Ratio, Foreign Source	115.7		Moderate
FDI Investment Ratio, Foreign Source	116.2		Moderate
FDI Employment Ratio, Domestic Source	142		Moderate
FDI Investment Ratio, Domestic Source	119.6		Moderate
Proprietorship	139.1		High
Farm Operators with Internet Access	187.9	26	High
Proprietorship Rate	127.8		Moderate
Change in Proprietorship Rate	186		High
Proprietor Income to Total Wages and Salaries Ratio	54.6		Low

Index Categories	Index Value	Highest Ranked Measures	Comparison
Employment and Productivity	130.1	28	High
Industry Performance	176.9		High
Latent Innovation	160.8		High
Industry Diversity	193.1	7	High
Industry Cluster Performance	57.3		Low
Industry Cluster Growth Factor	50		Low
Industry Cluster Strength	64.7		Low
Average Large Establishments (per 10,000 Workers)	176.6		
GDP	79.9		Low
Average Gross Domestic Product (per Worker)	80.3		Low
Change in Gross Domestic Product (per Worker)	79.5		Low
Patents	142.1		Moderate
Change in Average Patenting Rate	114.9		Moderate
Patent Diversity	169.4	170	High
Job Growth to Population Growth Ratio	196.1	11	High
Change in Share of High-Tech Industry Employment	128.1		Moderate
Economic Well-Being	120.5	154	Moderate
Residential Internet Connectivity	126.6		Moderate
Broadband Infrastructure and Adoption	141.2		Moderate
Broadband Adoption Barriers	104.4		Moderate
Compensation	117.4		Moderate
Change in Annual Wage and Salary Earnings per Worker	146.3	45	Moderate
Change in Proprietor Income (per Proprietor)	88.5		Low
Per Capita Personal Income Growth	90		Low
Income Inequality (Mean to Median Ratio)	90.4		Low
Average Poverty Rate	125.3		Moderate
Average Unemployment Rate	128.3		Moderate
Government Transfers to Total Personal Income Ratio	123.9		Moderate
Average Net Migration	162	45	High

SWOT ANALYSIS



Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

The CEDS Strategy Committee used its June and August meetings to participate in a Regional SWOT Analysis. During the first meeting, the Strategy Committee members worked individually to list their county's best assets, how their organizations benefit the county where they are located, the biggest challenges faced by their respective counties, and the biggest challenges faced by their organization.

EDD staff compiled these individual responses and organized them according to the CEDS PEP framework (People, Economy, Places). At the August meeting, staff presented the responses to the group together with some of the major findings from the CEDS report. Strategy Committee members were then asked to rank East Central Florida's challenges in order of importance. The three highest challenges per pillar are presented here.

Under the People Pillar, Strategy Committee members thought that the lack of talented/skilled workforce was the biggest challenge. This was followed by the growing gap in hard/soft skills and the predominance of low wage positions. The region's low prosperity level was ranked as the biggest Economy challenge followed by its high level of poverty and inequality and the lack of venture capital to help start businesses. Finally, the lack of land and buildings to site new businesses, high housing/transportation costs, and aging infrastructure were the biggest Place challenges.

Through the next three years, EDD staff will work with CEDS Strategy Committee members and other partners to develop initiative and programs that could help address these challenges.

CEDS Strategy Committee SWOT Exercises

East Central Florida's Biggest Challenges

People	Economy	Places
Lack of Talent/Skills	Low Prosperity Levels	Lack of Land and Buildings
Growing Hard/Soft Skills Gap	Poverty and Inequality	High Housing and Transportation Costs
Predominance of Low Paying Jobs	Venture Capital and Financing	Unavailable and Aging Infrastructure

GOALS AND STRATEGIES

IMAGE: ISMAGILOV - GETTY IMAGES

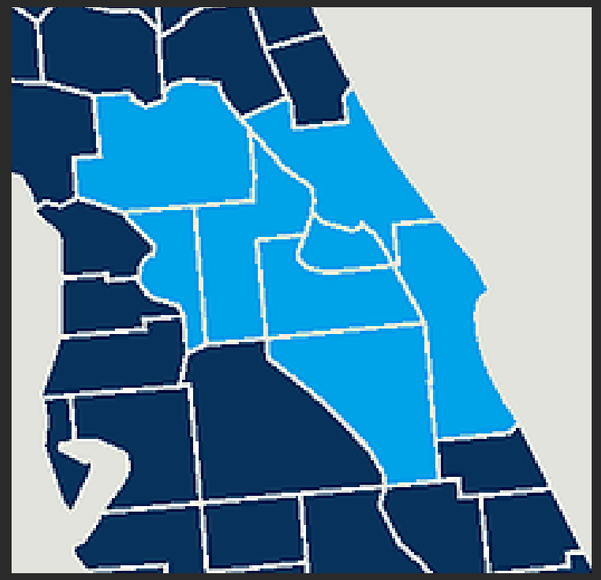
2022 CEDS VISION

Florida will have the nation's top performing economy and be recognized as the world's best place to live, learn, play, work, and do business.

Florida Plan for Strategic Economic Development

East Central Florida will become the state's nucleus of economic activity by capitalizing on our regional industry strengths, top educational institutions, natural and cultural amenities, high quality communities, and business assistance infrastructure.

East Central Florida CEDS Strategy Committee



R2C STRATEGY MAP – ECONOMIC RESILIENCE

Goal: Assess vulnerabilities of the economic system and develop strategies to adapt to shocks and stressors.				
Strategic Objectives	**Action Steps/ Partnerships**	**Targets**		
		Short-term	**Long-term**	**Ongoing**
• Identify vulnerabilities & a regionally consistent set of indicators of vulnerable economic systems	• Partner with organizations with focused efforts in gaps	X		
• Identify organizations working with and in indicators of vulnerable economic systems, amplify efforts and explore regional alignment and partnership.	• Amplify efforts & create alignment with CFF, OEP, tourism industry, Rollins Social Impact Hub, social entrepreneurship department, and rally through Crummer graduate business school, United Against Poverty and New Image Youth Center			X
• Standardize (normalize) credible metrics and transparency to track and benchmark progress/impact across sectors	• Amplify efforts of CFF and shared data repository with shared comprehensive scorecards • Consider funding REMI analysis (loss of sales, lack of access to people & capital) the cost of doing nothing from the latest impact- COVID			X
• Disseminate training opportunities, build capacity and consider incentives for business continuity planning, risk reduction, and survival across sectors.	• Partner with organizations tied to community businesses- Mainstreet			X
• Consider a financial structure/contribution during blue skies to build a business safety net for recovery/impact	•		X	

Goal: Increase investment in the region's innovation clusters and emerging industries that encourage economic diversification.				
Strategic Objectives	**Action Steps/ Partnerships**	**Targets**		
		Short-term	**Long-term**	**Ongoing**
• Develop understanding & encourage cross sector commitments (private, gov, civil society, academia, clusters) for sharing innovation	• Understand movement of goods/services/people around the region • Standardize credible metrics and transparency to track and benchmark progress/impact across sectors			X
• Develop recommendations, strategies and best practices that provide incentives for "green" economic growth	•		X	
• Stimulate investments in and development of work/study and apprenticeship programs for green jobs, with emphasis on inclusion for minority groups and disenfranchised youths	•		X	
• Invest in key vulnerable sectors AND emerging industries	•			X
• Promote circular economy concepts, practices and policies in industry and gov operations	•		X	

R2C STRATEGY MAP – ECONOMIC RESILIENCE

Goal: Foster sustainable and regenerative systems that promote equitable and inclusive prosperity				
Strategic Objectives	**Action Steps/ Partnerships**	**Targets**		
		Short-term	**Long-term**	**Ongoing**
• Develop local strategies to preserve dollars in Florida and protect our employees, resources and community.	• Define prosperity		x	
• Mirror metrics of embedded community organizations (strategy for prioritizing)	• Partner opportunities (e.g., Black Business Investment Fund, Prospera/HBIF, NEC, etc.)	x		
• Create expertise that can be exported	•			x
• Direct institutional money toward the betterment of the region. (e.g., CFDIs)	•			x
• Utilize regional food production systems to generate entrepreneurship and job creation opportunities	•			x

Goal: Position and advance east central Florida as a laboratory for new economic development concepts/ models using common and comparable metrics across all sectors				
Strategic Objectives	**Action Steps/ Partnerships**	**Targets**		
		Short-term	**Long-term**	**Ongoing**
• Educate and engage elected leadership on business as a force for good	•			x
• Educate and engage elected leadership on the necessity for public services and investments to enable and support sustainable economic development	•			x
• Develop incentives for business that align with local goals/efforts based on transparency and impact assessments	•		x	
• Encourage emphasis on accountable and performance based economic development	•			x
• Educate on opportunities offered by Social Enterprise/B Corp	•	x		

• Educate on the need for state support for regional approaches to economic development	•	X		

Goal: Eliminate education achievement gap (including ages 0-5) and increase exposure to learning as a prerequisite for innovation among differing demographics.				
Strategic Objectives	**Action Steps/ Partnerships**	**Targets**		
		Short-term	**Long-term**	**Ongoing**
• Standardize credible metrics and transparency consistent across the region to track the achievement gap.	• Establish baseline to benchmark progress /impact across sectors		X	
• Invest in early childhood education (0-5) and infrastructure	• Track investments to leverage max effectiveness	X		
• Increase spending in public education at all levels (low retention in ecf but high #s of students (tied to low wages)	•			X
• Teach/ reward an entrepreneurial mindset	•			X

Goal or desired result: Fund increased access to quality public goods and services in: transportation, housing, food access and affordability, quality childcare and digital broadband access.				
Strategic Objectives	**Action Steps / Partnerships**	**Targets**		
		Short-term	**Long-term**	**Ongoing**
• Work cross TAC and sectors to identify opportunities toward increased access.	•	X		
• Invest in early childhood education (0-5) and infrastructure	•	X		

CEDS IMPLEMENTATION PLAN

IMAGE: ATAKAN - GETTY IMAGES

CEDS IMPLEMENTATION PLAN

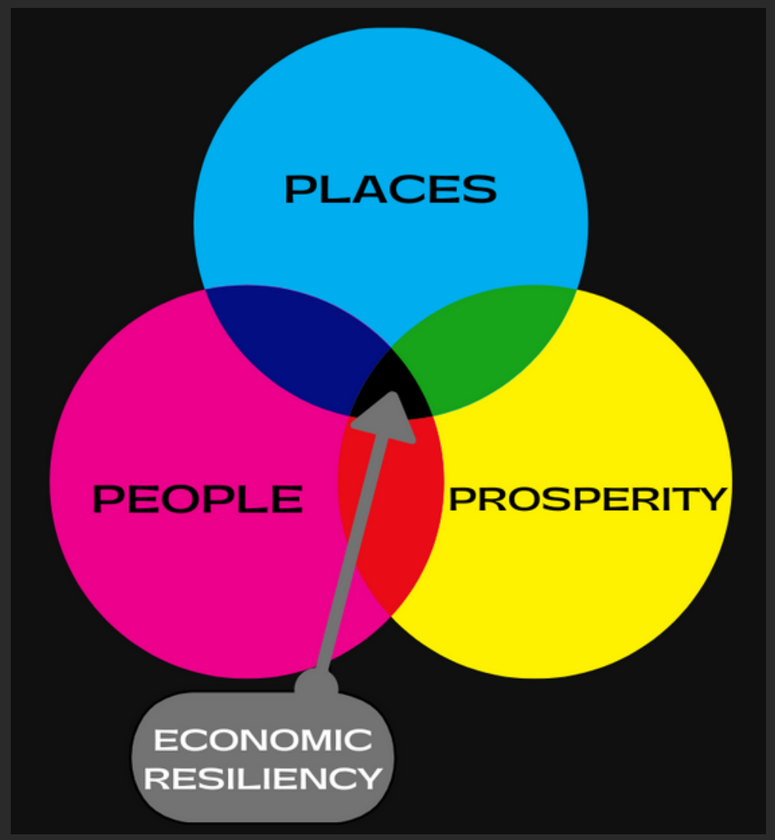
The East Central Florida CEDS document seeks to help the region become more resilient to economic shocks and natural disasters. This resiliency will be achieved when leaders maximize the development of the region's people, economic, and place-based assets. When compared against other EDD's, East Central Florida ranked within the best in the nation for Business Dynamics, Business Profile, and Human Capital and Knowledge indexes. The region offers great opportunities for job seekers, budding entrepreneurs, and investors. It is among the middle of the pack when it comes to Employee Productivity and Innovation indexes. Finally, the region ranked among the bottom in the nation in the prosperity and well-being measures. This last measure concurs with several of the issues identified by CEDS Strategy Committee member in the SWOT analysis.

When designing the CEDS five-year implementation program, the ECFRPC sought paths to address these regional challenges while also taking into account EDA's priorities, the role of the ECFRPC as a technical assistance provider, and EDD staff's expertise. Based on these different needs, the EDD will be giving priorities to projects that fall within three main categories:

- **Place-Based Economics**
- **Health and Equity**
- **Resilient Communities**

The next pages will delve more into each of these topics and list the type project and activities that are currently underway that serve each of the areas of interest.

CEDS FRAMEWORK



PLACE-BASED ECONOMICS

The Place-based economics priority area includes all projects and activities that use the ECFRPC's expertise in land use analysis, industry cluster analysis, strategic planning, and economic modeling to assist local governments to diversify their economies, attract new investment, and generate jobs. Since 2005, the ECFRPC has used the REMI PI+ model to estimate the economic impact of a variety of investments and activities including new infrastructure investments, business expansions, incentive packages, and public health interventions. This type of analysis traces spending through the regional economy and measures its cumulative effects of that spending. This includes estimating the direct, indirect and induced impacts that these activities can have on regional employment, sales (output), income, and gross regional product (GDP). In the next five years, EDD staff will be more intentional in incorporating the REMI PI+ model into the methodology of more projects. The ECFRPC has also identified seven regional industry clusters that provide the best opportunity to spur economic growth in the East Central Florida region: antennas and telecommunications, aviation/aerospace, modeling simulation and training, photonics, tourism, turbine technologies, and watercraft. Based on staff research, these clusters show a high level of concentration, distribution across several counties, strong ties between producers and suppliers, and a high level of innovation. Within the next five years, the ECFRPC will flesh out these clusters and use the REMI model to estimate their value to the region Finally, the ECFRPC will continue supporting EDA's programs and initiatives.

Place-Based Economics	
Priority Areas	**Sample Projects /Activities**
Economic Impact Analysis	The Economic Impact of I Drive Resort Area S.R 405 Economic Impact Analysis The Value of Seminole County's Child Care Services Costs, Benefits, and Connectivity: Assessing Options for Flood Resilient Transportation Upgrades in Four Southeastern Coastal Communities
Industry Cluster Analysis	Regional Innovation Clusters Study Watercraft Innovation Center Community Economic Development Strategic Plans
EDA Priorities	Public Works and Economic Adjustment Programs Economic Technical Assistance Opportunity Zones

HEALTH AND EQUITY

The Health and Equity priority area focuses on the development of partnerships and projects that foster social mobility and prosperity across region's communities by spurring entrepreneurship, promoting economic revitalization and neighborhood redevelopment, addressing the social determinants of health, and increasing access to fresh food.

For the past eight years, EDD staff has been working on projects to strengthen East Central Florida's food system. This started with supporting the creation of the region's Food Policy Council, Good Food Central Florida, in 2013. Since then, ECFRPC staff has been awarded $240k in grants and contracts to support regional food systems work. The ECFRPC's work has focused on using food production systems to generate jobs, foster entrepreneurship opportunities, and revitalize distressed communities. Because of this body of work, EDD staff has been invited to partner with several national organizations that support regional food systems including the Wallace Center at Winrock International, the Council of Development Finance Agencies, and the CLEO Institute.

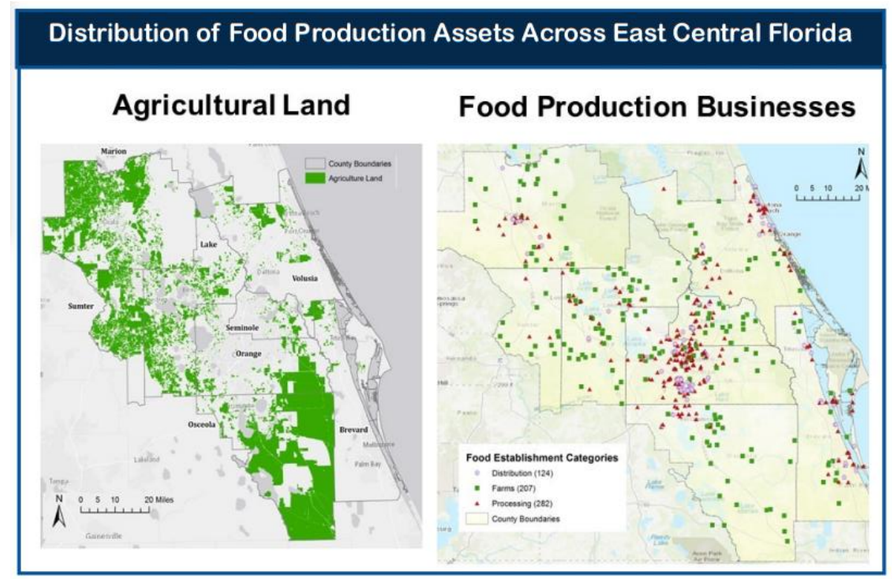
At the local level, the ECFRPC has also partnered with several county Health Departments to identify projects that address health disparities within the region. At this moment, the EDD's Program Manager is co-leading Healthy Seminole's Healthy Physical Activity Working Group. As part of this initiative, the ECFRPC is interested in estimating the longterm economic impact of health interventions in Seminole County. There have also been preliminary discussions to develop an equity profile for the East Central Florida region. Of most importance for EDD staff is to identify models that foster more inclusive economic development in our region.

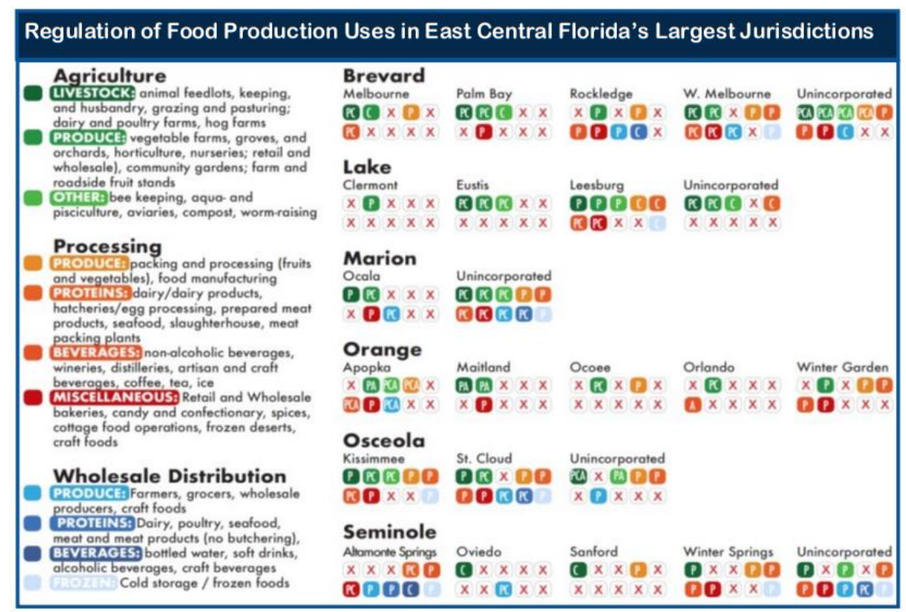
Health and Equity	
Priority Areas	**Sample Projects /Activities**
Regional Food Systems	Good Food Central Florida Council of Development Finance Agencies Food Systems Advisory Taskforce East Central Florida Food Resiliency Project
Health and Planning	Healthy Seminole Initiative Goldsboro Farmers Market Advisory Council
Equitable Communities	An Equity Profile of East Central Florida

Regional Food Systems Analysis

In 2013, the ECFRPC started a regional food systems program focused on developing innovative methods to assess and strengthen regional food systems and identifying ways in which they can be used to generate jobs, foster entrepreneurship, and revitalize distressed communities. While relatively new, this program has been a success. The ECFRPC has attracted $300,000 in grants and contracts to develop food systems projects across the region, and has partnered with national organizations like the Council of Development Finance Agencies and the Wallace Center at Winrock International. Using funding provided by Wallace, the ECFRPC developed a Regional Food Assets Inventory to help planners and economic development officials from across the region visualize the expanse and potential of the region's food systems. These assets include both agricultural lands and food production businesses (farms, processors, distributors). In addition to this GIS analysis, EDD staff also examined how the region's 35 largest jurisdictions regulate food production uses. EDD staff will use the information from these two analyses to develop new economic development strategies that incorporate regional food production systems. As part of this process, the EDD staff recently completed a draft food systems ordinance for the City of Orlando that incorporates some of these principles.

The advent of the COVID-19 pandemic and the subsequent economic crisis it spurred have accelerated the need to develop comprehensive policies to address gaps in regional food systems. There have been significant disruptions in the nation's food supply chain, which has also affected Florida residents' access to fresh food. Increasing local food production can help to increase the social, economic, and environmental well-being of our region. To assist with this effort, the ECFRPC applied to and was awarded a Community Planning Technical Assistance Grant from the Florida Department of Economic Opportunity to develop the East Central Florida Food Resiliency Action Plan. The plan will use information from the inventory and zoning audit to inform a SWOT analysis of East Central Florida's Food Systems and develop a matrix that outlines tasks that different stakeholders can take to increase the regional food production system's resiliency. This matrix will also include a descriptor for "assigning" the tasks so entities can better deduce which ones are most applicable to them.





RESILIENT COMMUNITIES

The purpose of the EDD's Resilient Communities Program is to help prepare East Central Florida's communities so they can recover quickly from both natural and economic shocks such as natural disasters, sea level rise, and loss of large employers. The idea here is not to just return these communities to their previous state, but also help them to reduce recovery times and improve by addressing the structural issues that they are currently facing.

In 2017, the ECFRPC developed the Regional Resiliency Action Plan for Brevard and Volusia counties in conjunction with 70 stakeholders. The plan's goals and strategies focus on four main areas: leadership and strategy, economic and society, infrastructure and environment, and health and well-being. Since then, the ECFRPC has been awarded over $200k in grants to develop resiliency plans for various municipalities. This includes the Cocoa Business Resiliency Plan, which was recently funded by the U.S. Economic Development Administration. Several of these projects incorporate the REMI PI+ model to estimate the economic benefits of doing green infrastructure interventions.

Parallel to these efforts, the ECFRPC has been organizing the East Central Florida Regional Resiliency Collaborative. With over 30 members, the objective of this group is to develop framework to address resilience issues within the region. As part of this effort, the ECFRPC is coordinating five technical advisory subcommittees: Risk and Vulnerability Assessment, Health and Equity, Green, Gray, Blue Infrastructure, Engagement and Academy Development, and Economic Resilience. EDD staff will provide technical support to this last subcommittee.

Resilient Communities	
Priority Areas	**Sample Projects /Activities**
Resiliency Planning	Resilient Community Plans COVID-19 Support Activities
East Central Florida Collaborative	Economic Resilience Technical Advisory Committee

East Central Florida Regional Resiliency Collaborative Sign-Up Ceremony