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# PINELLAS COUNTY

ECONOMIC DEVELOPMENT

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## 2017-2027 ECONOMIC PROJECTION

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# Executive Summary

Pinellas County is expected to see total employment increase by 5.5% with over 25,000 new jobs created between 2017 and 2027. The brightest spot in these projections is that some industries and occupations involved in professional business services, corporate management, and STEM will see above average growth. Health care is also projected to have massive employment gains. Much of the projected job growth however will occur in lower paying industries and occupations such as retail, personal services, and food services. There are two concerning trends though that must be addressed in the data. The first is that several well-paying industrial sectors: finance, manufacturing, and utilities are all projected to have declines in employment over the next 10 years. The second is that Pinellas County projects to have the slowest rate of growth in the entire Tampa-St Petersburg-Clearwater MSA and Greater Tampa Bay Region. To put this trend into perspective, Hillsborough County is projected to have almost twice the rate of job growth and over three times as many new jobs created by 2027.

These projections however are not set in stone and merely represent a baseline forecast and can be thought of as the local economy acting on “cruise control”. Economic, technological, and policy events could change any number of these projections and obviously no computer model can predict a “black swan” type event. The numbers however do provide a benchmark for thinking about what the Pinellas economy may be like in the medium to long term.

SWOT	
Strengths	Weakness
<ul style="list-style-type: none"> <li>• Strong growth in several high paying sectors like management and professional services</li> <li>• Federal transfer payments and retirement savings are a sturdy bedrock to the consumer economy</li> </ul>	<ul style="list-style-type: none"> <li>• Slower workforce growth than other parts of Tampa Bay</li> <li>• Continued growth, by necessity, will depend on redevelopment with increased density of jobs and housing</li> <li>• Some of the fastest growing sectors are low wage industries</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Building on previous success in attracting corporate management offices and professional service firms</li> <li>• Decline in the broad information sector hides growth in the software industry</li> <li>• Pinellas is moving towards a more creative and knowledge based economy</li> <li>• Further job growth will require more urbanization of the built environment</li> </ul>	<ul style="list-style-type: none"> <li>• Health care is eating the rest of the workforce</li> <li>• Economic bifurcation – more growth is happening at the high and low ends of the income spectrum with rising inequality</li> <li>• Difficulty retraining after job losses in sectors like manufacturing</li> </ul>

# Introduction

Economic forecasting can be a touchy subject, but also is valuable for understanding what the future may bring. 2027 seems like a long time from now, but most of us can still vividly remember 2007. Unfortunately, economic analysis is unable to make predictions about the really important information in the future like self-driving cars, cities on Mars, or when the Rays are going to win a World Series. Forecasting however can help paint a picture of likely trends based off available data. This report uses data from Economic Modeling Services’ Emsi tool to project what the future of Pinellas County’s economy may be like. It uses the years 2017 and 2027 as the starting and ending points for the analysis along with the intermediate years to illustrate trends. The projections are made both from a top down and a bottom up comparison that gives perspectives from both business and workers.

As a brief technical note, industries in this report are classified by NAICS and occupations by SOC. NAICS, North American Industry Classification System, codes are a uniform set of codes used by the United States, Canada, and Mexico to classify what a business does. These codes at the broad level are 2 digits (e.g. 52 – finance and insurance) and drill down all the way to a very specific 6 digits (522292 – real estate credit). SOC, Standard Occupation Classification, codes are similar in that they are 2 to 6 digit codes that classify specific occupations. Each method of classification has strengths and weaknesses because they use different vantages, but importantly they can be used together to paint a fuller picture.

An important point to consider is that all projections in models are based off of past events and rely on the assumption that the future will conform to the same patterns as the past. A more accurate description of this information is instead of considering it a “prediction” is to think of the data saying “if current trends continue, then...” The Emsi model is based off of a synthesis of public and private sources such as the US Census Bureau, the Bureau of Economic Analysis, and Infogroup. Anomalous activity, particularly at very specific industry and occupation levels, can skew future projections, so it is important to remember that these projections are only projections and should be taken with a hefty grain of salt.

The broad trends about employment do show that Pinellas County has modest growth projected for the ten year period. 5.5% growth and 25,000+ news jobs are fine headline numbers, but trail the gains that are projected elsewhere in the region.

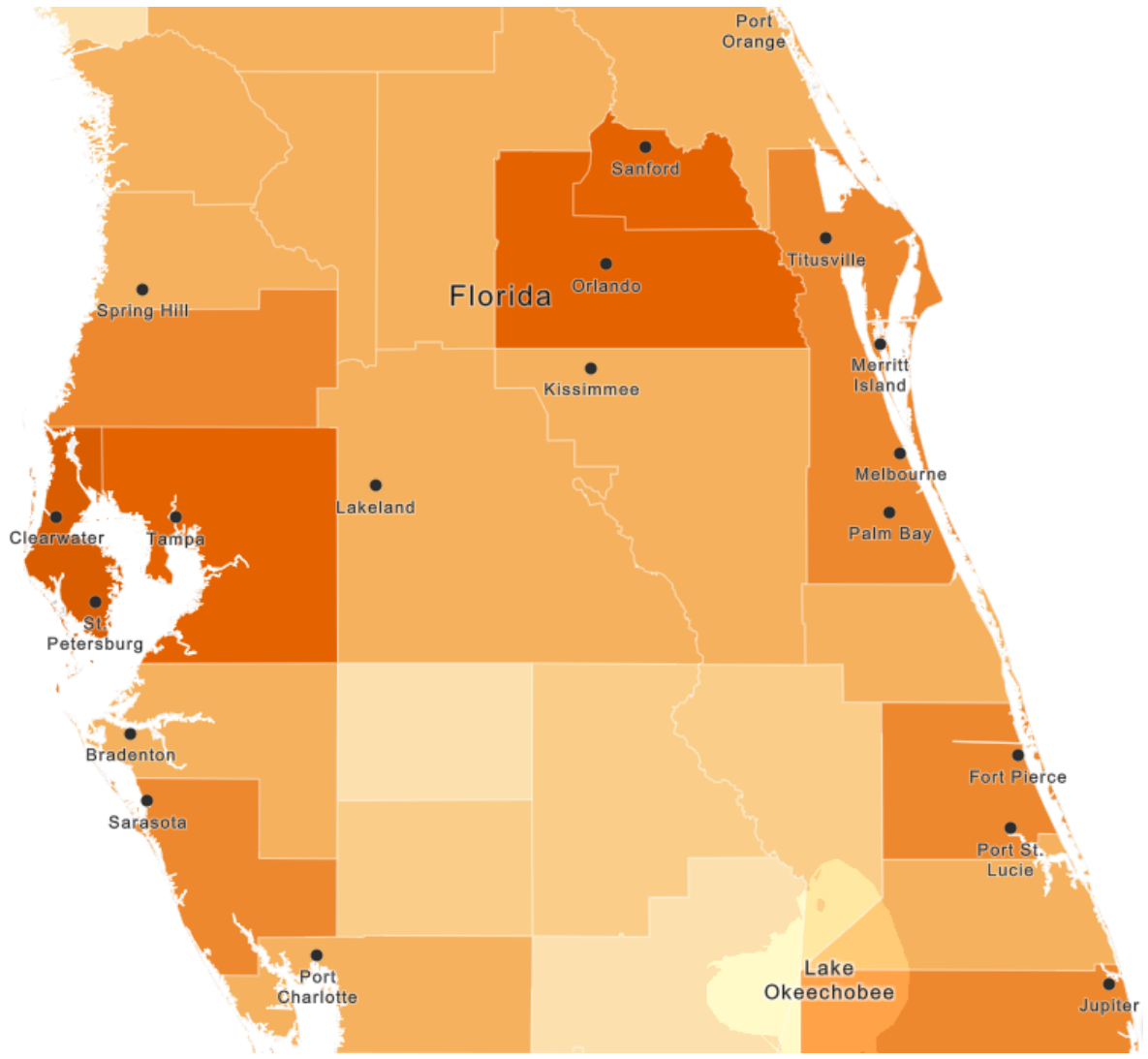
<b>2017-2027 Job Projections</b>				
<b>Region</b>	<b>2017</b>	<b>2027</b>	<b>Δ</b>	<b>%Δ</b>
Pinellas	457,050	482,281	25,231	5.5%
Hillsborough	729,120	807,153	78,033	10.7%
Pasco	128,294	149,334	21,040	16.4%
Hernando	46,100	52,158	6,058	13.1%
Sarasota	181,185	202,794	21,609	11.9%
Manatee	133,236	151,224	17,988	13.5%
Polk	232,738	251,410	18,672	8.0%
Citrus	36,240	39,512	3,272	9.0%

Tampa-St Petersburg-Clearwater MSA (Pinellas, Hillsborough, Pasco, Hernando)	1,360,564	1,490,926	130,362	9.6%
Greater Tampa Bay (MSA, Sarasota, Manatee, Polk)	1,907,723	2,096,354	188,631	9.9%
Tampa Bay Media Market (Greater Tampa Bay, Citrus)	1,943,963	2,135,866	191,903	9.9%
Florida	9,323,491	10,364,881	1,041,390	11.2%
USA	159,180,936	174,926,340	15,745,404	9.9%

The reason why growth is trailing in Pinellas compared with other parts of the region is almost certainly because Pinellas is built out with very limited opportunities for green field development and nearly all new development requires the redevelopment of existing property. Redevelopment almost always means firms must spend more money to retrofit or demolish existing structures and often must engage in expensive remediation efforts. The pictures on the next few pages are taken from Social Explorer, using data from the American Community Survey, and chart population density at the county and the census tract levels. Population density works as a good proxy for determining how urbanized and built out a region is. Pinellas County is an extreme outlier not only Florida, but the entire South. Its population density, 3,431.5 people per square mile, is more than twice that of the next most densely populated county in the state. Pinellas County’s population density actually ranks it as being one of the most densely population counties in the entire country.

The general trend is that job growth is projected to occur most rapidly where land is cheap and readily available. Pinellas frankly does not have any land like that. By comparison, Hillsborough County still has some available green field land for development outside of Tampa and on its periphery. From a percentage growth perspective however, job growth is expected to occur most quickly in the MSA’s hinterlands, Pasco and Hernando Counties. A basic correlation measure between population density and percentage job growth for counties in the Tampa Bay Media Market yields a strong negative relationship ( $r = -0.58$ ) between population density and projected percentage job growth.

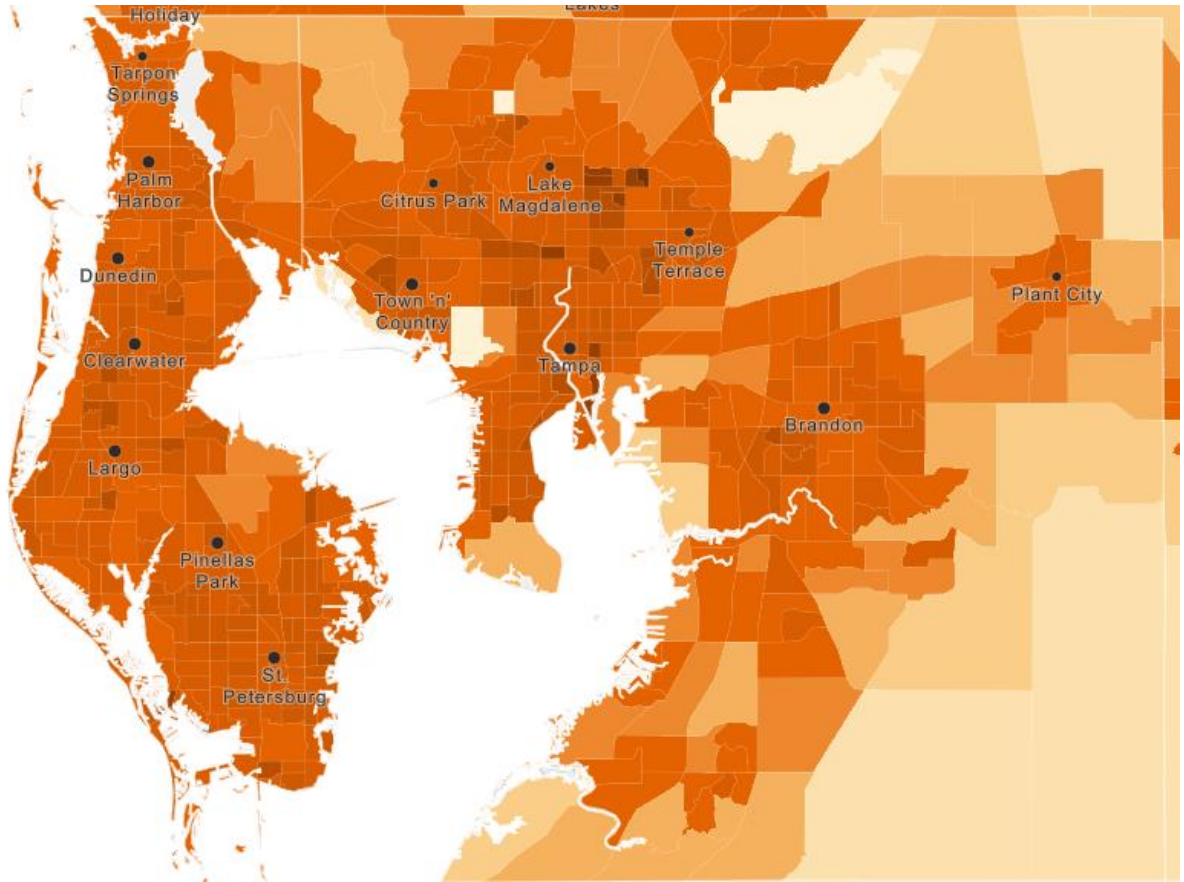
<b>Population Density by Geography</b>	
<b>Geography</b>	<b>Population Density (persons/square mile)</b>
<b>Pinellas</b>	<b>3,431.5</b>
Hillsborough	1,296.8
Pasco	653.8
Hernando	374.1
Sarasota	716.0
Manatee	475.7
Polk	354.7
Citrus	241.5
Tampa-St Petersburg-Clearwater MSA	1,164.8
Source: American Community Survey 2016 5 Year Estimates	



*Central Florida*

**Population Density**

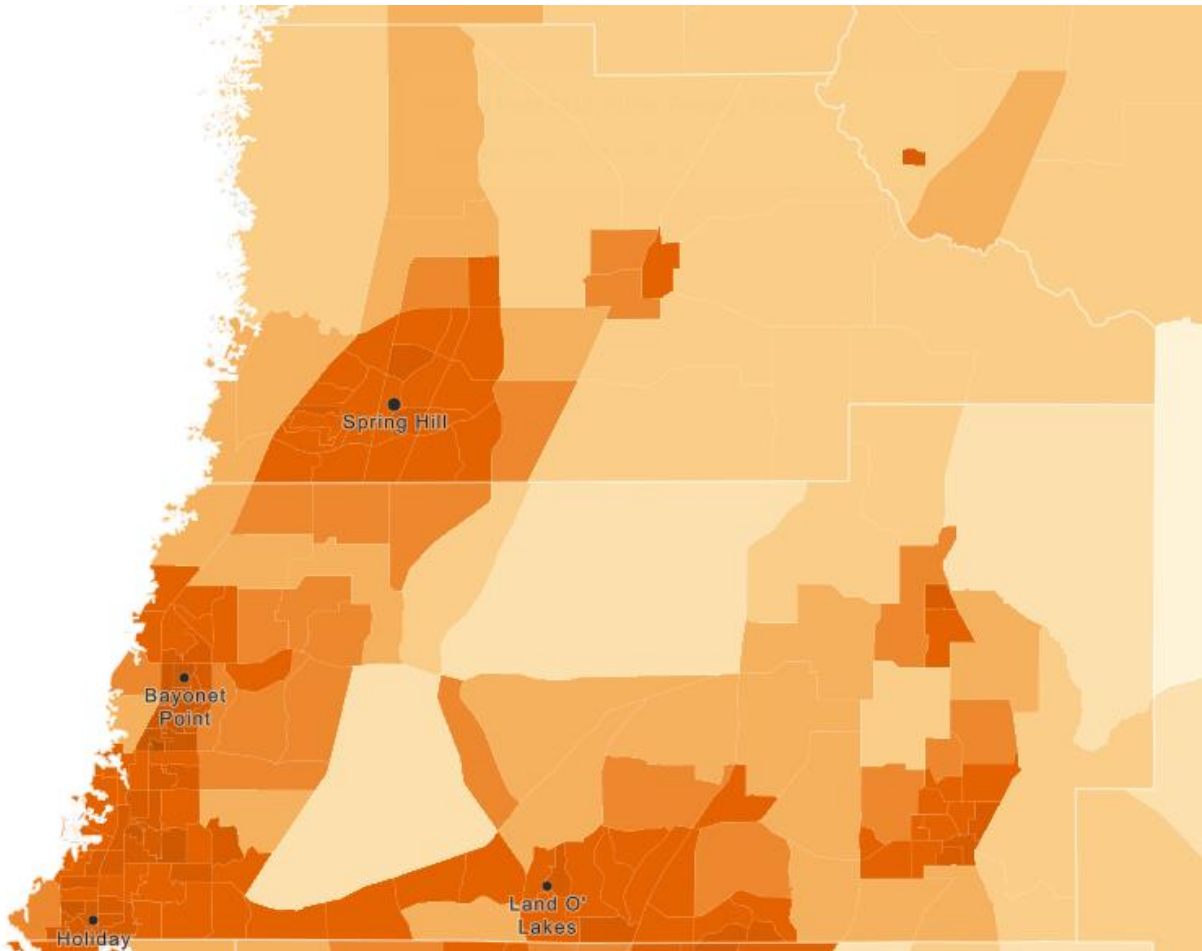




*Pinellas and Hillsborough Counties*

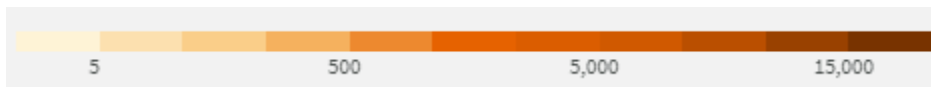
**Population Density**





*Pasco and Hernando Counties*

**Population Density**



## **NAICS Analysis**

The broad picture for the economy in Pinellas over the next 10 years is positive. The number of jobs is expected to increase, but at a slower rate than neighboring counties that share the MSA. The county's targeted industries are expected to be a mixed bag with targeted manufacturing generally declining in employment, but business services increasing. Overall targeted industry growth is projected to be almost twice as fast as other forms of employment growth in Pinellas County between 2017 and 2027.

The brightest sign in the above table is that the management of companies and enterprises sector is expected to have substantial growth driven by expansions of corporate, subsidiary, and regional managing offices. Corporate offices are a boon to the local economy for the two reasons that first, these tend to be some of the better paying jobs in the area, and second, because they draw money into the county from outside sources. Professional, scientific, and technical services are another bright spot for similar reasons. In particular, management and technical consulting services are projected to have very strong growth over the next 10 years. A low cost of living coupled with the Tampa Airport's ongoing expansion are positive markers that could help accelerate business and professional employment growth.

The most concerning trend is that manufacturing is projected to lose jobs over the next ten years. The manufacturing workforce tends to be older than most industry segments and this may be a consequence of the workforce retiring and not being replaced. Manufacturing employment in Pinellas has grown modestly in recent years, but has never reached employment past what it was prior to the Great Recession. Employment bottomed out in 2010 and even in the 2017 data, manufacturing employment is only approximately what it was in 2009. Pinellas County, being one of the most industrialized parts of Florida, is likely to suffer from the ongoing "manufacturing paradox" as manufacturing output continues to increase, but the number of employees working in factories will likely decrease. To put this into perspective, the [National Associations of Manufacturers 2017 state report](#) calculated Florida's industrial output as being approximately \$45 billion in 2015 compared with about \$37 billion in 2005. Even though manufacturing output increased over 20%, Emsi shows the state also lost 60,000 manufacturing jobs during that 10 year period. A strong possibility is that in the lead up to 2027 is that this trend continues and that Pinellas will see increased industrial output with more efficient factories using more advanced technology, but employing fewer workers. The silver lining however is that more advanced manufacturing technology will likely mean that the remaining manufacturing workforce will likely be better paid and more skilled as the manufacturing sector becomes increasingly a highly skilled and more professional environment.

The good news is that most complicated and high value manufacturing generally is projected to either have job gains or only minimal declines. For example, chemical (including pharmaceutical) and plastic manufacturing are both expected to increase their employment. Food manufacturing is projected to decrease overall, but the Emsi model projects employment to increase quickly in local beverages such as breweries, wineries, and distilleries. Most likely the model is picking up the tail end of the craft beverage boom, but this trend is still an opportunity to increase exports and engage in import substitution to keep money locally circulating. The biggest absolute decline in manufacturing appear to be in commercial printing and this is almost certainly linked with the decline in print media. Medical



devices are projected to take a small hit along with aerospace manufacturing. Electronics manufacturing is projected to decrease primarily thanks to a decline in the catch-all category of search, detection, navigation, aeronautical and nautical system and instrument manufacturing, but also circuit board manufacturing is projected to decline as well. In the electronics category however, there is projected growth in computer manufacturing.

Job losses are also projected to occur in the administrative and support sector and this trend appears to be driven by declines in temporary help services and professional employer organizations. A possibility is that outsourced firm services such as human resources are being replaced with more software services that necessitate smaller numbers of absolute workers. An optimistic interpretation is that more temporary employees could ultimately be transferred to full time workers in different industries. Information is also projected to lose jobs over this period and, almost certainly, this is because of secular industry changes. What remains in print media publishing is projected to lose over half of all workers during this period. Wired telecommunication carriers are also projected to shed employees. Software publishing and data processing however are expected to have strong growth and represent opportunity in the county.

The finance and insurance sector is also projected to lose jobs over the next 10 years, but in a more idiosyncratic way than other industries. The credit intermediation family of industries is the best example of this trend as depository and nondepository intermediation are both projected to lose jobs, but the activities related to intermediation sector is projected to gain a significant number of employees. Activities in the retail side of finance and insurance sector may be changing in employment due to changes in consumer preferences, such as the projected employment decline in insurance agencies and stock brokerages, as more consumers move towards buying financial instruments online.

Health care is projected to gain the most jobs over this time period and this almost certainly will be a consequence of the growing retiree population. The good news to the growth in the health care sector is that the industry is largely reliant on transfer payments from the federal government, via Medicare and Medicaid, which that provides a cushion of stability in case of a future recession. Health care industries also provide above average wages that are useful for propping up parts of the economy reliant on consumer spending. The second fastest growing segment of the economy is project to be the accommodation and food services sector and its growth is mostly projected to occur because of the restaurant industry. The accommodation side of the sector also projects healthy growth and these industries do naturally complement each other. Tourism is one of several economic pillars in Pinellas County, so it is worthwhile to see growth in the sector, but the concerning trend with growth in accommodation and food services however is that it is the lowest paying sector of the economy. A bit of skepticism regards growth in the restaurant industry, along with a point of concern, is that by 2027 many millennials will largely have “aged out” of working in food services and be seeking better employment. The challenge regarding this industry is that it provides lots of “jobs” but very few good “careers”.

Real Estate and Rental Services is another component sector that projects solid growth. Interestingly, what many people assume when they think about the sector, real estate agencies, is actually projected to decline in employment. However, there is expected to be quick growth in property management companies over this period. Likely this trend has been related to the recent boom in apartment construction. Construction is also projected to have strong growth and interestingly this

appears mostly to be seen in specialty trade contractors such as plumbing and electrical. Part of this may be because of renewed interest in renovating parts of Pinellas, but part also may be because of firms located in the county that perform their primary work in other parts of the MSA, and even nationally.

Educational services are an interesting bright spot in the overall economy as there is projected quick growth in the sector. Elementary and secondary schools are projected to have substantial growth in employment, but this is dwarfed by the explosive growth in the junior college sector. St Petersburg College rapidly expanded during the years prior to 2017, so that is likely the primary reason why growth is projected to be so ample. Most likely this is somewhat anomalous and idiosyncratic as employment in the technical school and university sectors is projected to decrease over this period. On the other hand, Nova Southeastern University’s plans to open a new medical school in Clearwater could change the dynamics in educational employment and the project is not accounted for in the model. A likely outcome is that the education sector will see growth, but not nearly as aggressively as Emsi projects.

The arts and entertainment sector is projected to grow faster than average with amusement and recreation firms adding the most overall employees. Performing arts are projected to have some growth, but the “museums, historical sites, and similar institutions” category is expected to have the largest relative growth in the overall cluster. Unsurprisingly, arts and cultural attraction have emerged recently as a component of the tourism economy and provide and may be seen as complimentary to industries such as accommodation and food services.

### NAICS Targeted Industries

Pinellas County Economic Development has target industries that are businesses which pay well and bring in money from outside of the community. Local economic policy is to encourage the growth of these firms and occasionally to use incentives to help attract new firms or expand existing firms. Pinellas has six targeted industry sectors.

NAICS Targeted Industry Growth				
	2017	2027	Δ	%Δ
Aviation/Aerospace	3,452	2,989	-463	-13.4%
Finance/Insurance	13,675	13,602	-73	-0.5%
Defense/Homeland Security	116	142	26	22.4%
Medical/Biotech	6,162	5,624	-538	-8.7%
Business Services	31,108	38,552	7,444	23.9%
Information Technology	12,654	12,975	321	2.5%
<b>Sum</b>	<b>67,167</b>	<b>73,884</b>	<b>6,717</b>	<b>10.0%</b>

The good news from looking at these projections is that overall, the growth of targeted industries is expected to exceed the overall growth in the county. Closer inspection however reveals that the almost entirety of this growth is coming from the business services category. Two other sectors, defense and information technology, are projected to have some growth between 2017 and 2027, but employment is projected to decrease in the aviation and aerospace, medical and biotech, and finance and insurance sectors.

The second table, sectors of interest, contains somewhat miscellaneous industries that the county likes to track and analyze. Microelectronics, although not a directly targeted industry, is a large manufacturing segment that pays workers well, so it is very concerning that it is projected to decline. Industrial and commercial manufacturing is a true potpourri with components such as batteries, commercial lighting, and hardware. The category most closely resembles “traditional manufacturing” in the vernacular sense.

Sectors of Interest				
	2017	2027	Δ	%Δ
Microelectronics	4,745	4,436	-309	-6.5%
Industrial and Commercial Manufacturing	6,142	6,067	-75	-1.2%
Sum	10,887	10,503	-384	-3.5%

The concerning trend from the previous two tables is that good paying manufacturing jobs are projected to decline significantly even while the rest of the economy is growing. Target industry growth is shifting to the service sector and, in particular, there are concerns about high tech manufacturing companies contracting their workforces.

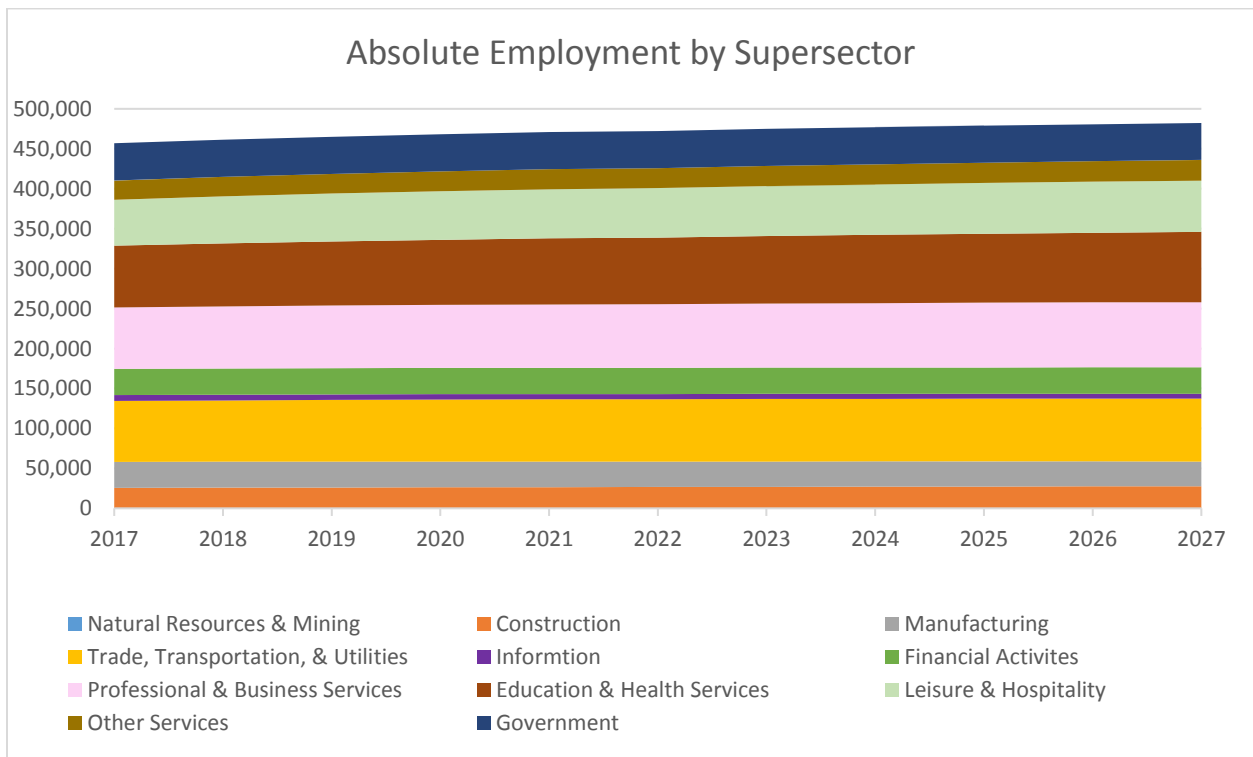
## Overall Charting

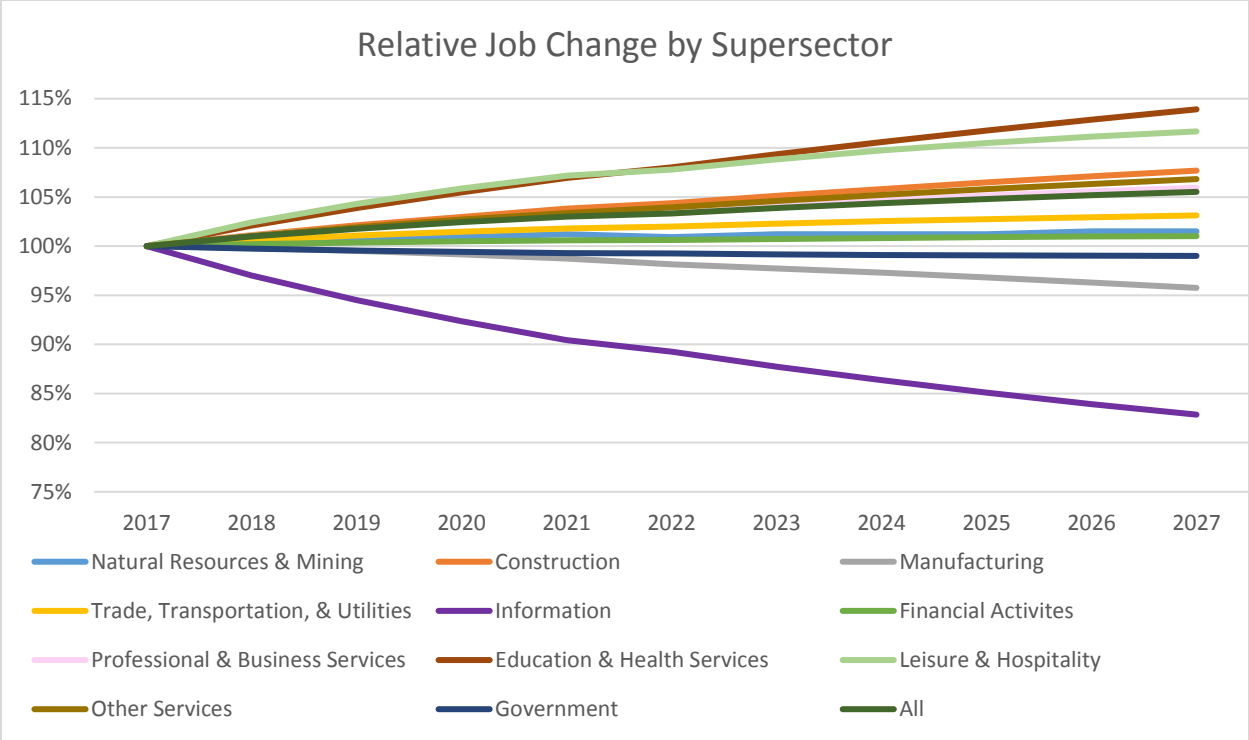
	2017	2027	Δ	%Δ
Agriculture, Forestry, Fishing and Hunting	321	317	-4	-1.2%
Mining, Quarrying, and Oil and Gas Extraction	12	21	9	75.0%
Utilities	711	606	-105	-14.8%
Construction	25,284	27,226	1,942	7.7%
Manufacturing	32,462	31,083	-1,379	-4.2%
Wholesale Trade	13,553	12,947	-606	-4.5%
Retail Trade	56,005	58,754	2,749	4.9%
Transportation and Warehousing	6,105	6,451	346	5.7%
Information	7,326	6,070	-1,256	-17.1%
Finance and Insurance	20,689	19,426	-1,263	-6.1%
Real Estate and Rental Leasing	12,021	13,616	1,595	13.3%
Professional, Scientific, and Technical Services	33,923	36,776	2,853	8.4%
Management of Companies and Enterprises	14,208	17,177	2,969	20.9%
Administrative and Support and Waste Management and Remediation Services	28,856	27,605	-1,251	-4.3%
Educational Services	8,158	9,564	1,406	17.2%
Health care and Social Assistance	69,121	78,470	9,349	13.5%
Arts, Entertainment, and Recreation	9,388	10,110	722	7.7%
Accommodation and Food Services	48,008	53,984	5,976	12.4%
Other Services (except Public Administration)	23,952	25,585	1,633	6.8%
Public Administration	46,765	46,299	-466	-1.0%
Unclassified Industry	182	195	13	7.1%
<b>All</b>	<b>457,050</b>	<b>482,282</b>	<b>25,232</b>	<b>5.5%</b>

## Condensed Trends

The following charts condense Pinellas County’s NAICS codes into similar to groups in order to chart together the growth of related industries and make trends easier to visualize. The classification used are NAICS super sectors.

Supersector	Components
Natural Resources & Mining	Agriculture, Forestry, Fishing, & Hunting; Mining, Quarrying, Oil & Gas Extraction
Construction	Construction
Manufacturing	Manufacturing
Trade, Transportation, & Utilities	Wholesale Trade; Retail Trade; Transportation and Warehousing; Utilities
Information	Information
Financial Activities	Finance and Insurance; Real Estate
Professional and Business Services	Professional, Scientific, & Technical Services; Management of Companies & Enterprises; Information; Administration & Support & Waste Management & Remediation Services
Education and Health Services	Educational Services; Health Care & Social Assistance
Leisure & Hospitality	Arts, Entertainment, & Recreation; Accommodation and Food Services
Other Services	Other Services (Except Public Administration); Unclassified Industries
Government	Public Administration





## SOC Analysis

Comparing NAICS and SOC constructions of the economy is not an apples to apples comparison, but there are similarities between the two types of analysis. The charts below are an attempt to combine somewhat similar occupational groups to first make the charts less cluttered, but also in order to foster comparisons with the combined NAICS sectors.

The biggest highlight from the SOC analysis comes from separating the medical occupations into their own groupings. The discretionary category, personal services combined with food services and arts and entertainment occupations, shows slightly slower growth when compared with the NAICS analysis, but still is one of the strongest growing parts of the local economy.

The management and business professional category has healthy and above average growth in a high wage sector as all of its subfields are projected to grow faster than county jobs as a whole. In particular management occupations are projected to have strong growth because of Pinellas County’s strength as a location for corporate headquarters and regional offices. These types of highly skilled business professional occupations show the trend that Pinellas is becoming a larger hub for “white collar” labor. A concerning issue is that STEM jobs are projected to approximately mirror the job growth rate for the county as a whole even though STEM occupations nationwide are projected to be one of the faster growing sections of the economy. The reason, after digging into more specific codes, appears to primarily be because the “architects and engineering occupations” job category is expected to decline in overall employment. This appears to be because the demand for drafting, engineering, and mapping technicians is projected to decrease even though the demand for engineers is projected to increase and

the demand for architects will be flat. The other component categories in the broad STEM classification however are projected to grow faster than average.

STEM related occupations are expected to have a bright outlook over the next 10 years. Many health care jobs require a STEM background and some of the occupations within the broad SOC category “business and financial operations specialists” such as management analysts, market research analysts, and financial specialists require advanced technical training and skills similar to STEM fields. Technology and technical proficiency have become so prevalent in highly skilled occupations that the stark “STEM or not STEM” binary may no longer valid and has been replaced by a fuzzier STEM continuum as bits and pieces of STEM skills have crept their way into middle and high skill occupations throughout the economy. Recent reports by the [National Science Foundation](#) and [London School of Economics](#) have both noted this emerging fuzziness as many STEM graduates work outside of traditional STEM fields and employers in non-STEM industries look for workers with STEM related skills.

The production and distribution category includes the broad industrial jobs found in manufacturing and related industries. Unsurprisingly it appears to have the slowest growth of any category. Only a small number of manufacturing occupations are projected to grow over this period and the broad SOC aggregate for production is expected to decline. An interesting trend in action is that, broadly, manufacturing occupations at the lower end of the skill spectrum will decline while there are opportunities at the middle skill level. The table below is a basic example of this trend as it shows the divergence in manufacturing with two lower skill manufacturing occupations both on the decline and two higher skill manufacturing occupations ascending. What can be extrapolated is that in the future, manufacturing is going to provide fewer careers, but manufacturing workers will likely be more productive, better paid, and more credentialed than they are today.

Job	SOC	2017 Jobs	2027 Jobs	Δ	Job Zone and Training (Adapted from O*NET)	Median Hourly Wage (2017)
Team Assemblers	51-2092	2,810	2,595	-215	Two: Some Preparation Needed. Usually a high school diploma	\$12.33
Computer-Controlled Machine Tool Operators, Metal and Plastic	51-4011	287	333	+46	Three: Medium Preparation Needed. Training in vocational schools, related on-the-job experience, or an associate's degree.	\$16.16
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	51-4031	306	262	-44	Two: Some Preparation Needed. Usually a high school diploma	\$12.68
Machinists	51-4041	1,004	1,069	+65	Three: Medium Preparation Needed. Training in vocational schools, related on-the-job experience, or an associate's degree.	\$19.01

By comparison, construction and transportation occupations are expected to have more sizable growth with construction growing slightly quicker than average. Transportation workers are expected to grow modestly, but there are interesting trends hidden below the headline numbers. Air transportation workers, such as flight attendant and pilots, are projected to grow by over 10%, albeit from a small base number, if trends continue, and the St Petersburg-Clearwater Airport continues its growth. On the lower

end of the income spectrum, taxi drivers and chauffeurs are projected to increase by almost 25%. This projection however is almost certainly on the high range as the explosive growth of companies such as Uber and Lyft will almost certainly tamp down in the coming years. Truck drivers however are projected to be in demand over the coming years with modest employment growth. The material moving workers segment in the transportation category is projected to decline in employment, but this is almost entirely because the miscellaneous “laborers, and freight, stock, and material movers, hand” category, a catch all for general manual labor, is projected to decline in employment while other jobs in the materials moving category are projected to remain flat or experience small employment bumps.

After health care, employment in food preparation is expected to be the fastest growing industry in Pinellas County. Unsurprisingly, this mirrors the NAICS analysis and brings with it the same general warnings of low wages and a workforce looking for better careers.

Sales occupations, both retail and wholesale are predicted to have weaker job growth on the whole over the next 10 years. Retail occupations are expected to grow, but wholesale sales workers are expected to decline along with specialized sales workers in fields such as advertising, insurance, and securities. Wholesale sales representatives are largely coupled with the decline in manufacturing employment. A decline in insurance and securities sales agents is certainly linked with the finance and insurance NAICS sector’s employment decline. The decline in advertising sales agents is somewhat puzzling because marketing occupations are projected to increase, but it may be linked with the declines in the print publishing and commercial printing industries.

The average hourly wage statistics in EMSI’s SOC analysis can also be used to model the effects of 2027 employment composition and how it differs from the 2017 composition. Using weighted aggregations for the number of 2017 and 2027 occupations generates the following descriptive statistics:

<b>Descriptive Weighted Wage Statistics</b>		
<b>Average Hourly Wage</b>	<b>2017</b>	<b>2027</b>
Mean	\$21.02	\$21.10
Median	\$16.20	\$16.19
Variance	188.91	194.27
Standard Deviation	13.74	13.94
Skew	0.350	0.352
Gini Coefficient	0.298	0.301

The good news is that the average hourly wage, in constant 2017 dollars, is projected to increase over the next ten years. However, the 2027 employment composition projects that income gains will entirely go to those in the top half of the income distribution. The decreasing median signifies that the bottom half of workers will actually see their incomes slightly decline. The variance and standard deviation, both having increased, signify that earnings will be more “spread out” in the future as both metrics are measures of dispersion. The skew value, being positive, also signifies a more top heavy distribution for wages. Even with these changes however, the Gini Coefficient, a measure of income inequality in which zero represents perfect equality and one represents perfect inequality, is not projected to rise substantially over this period.

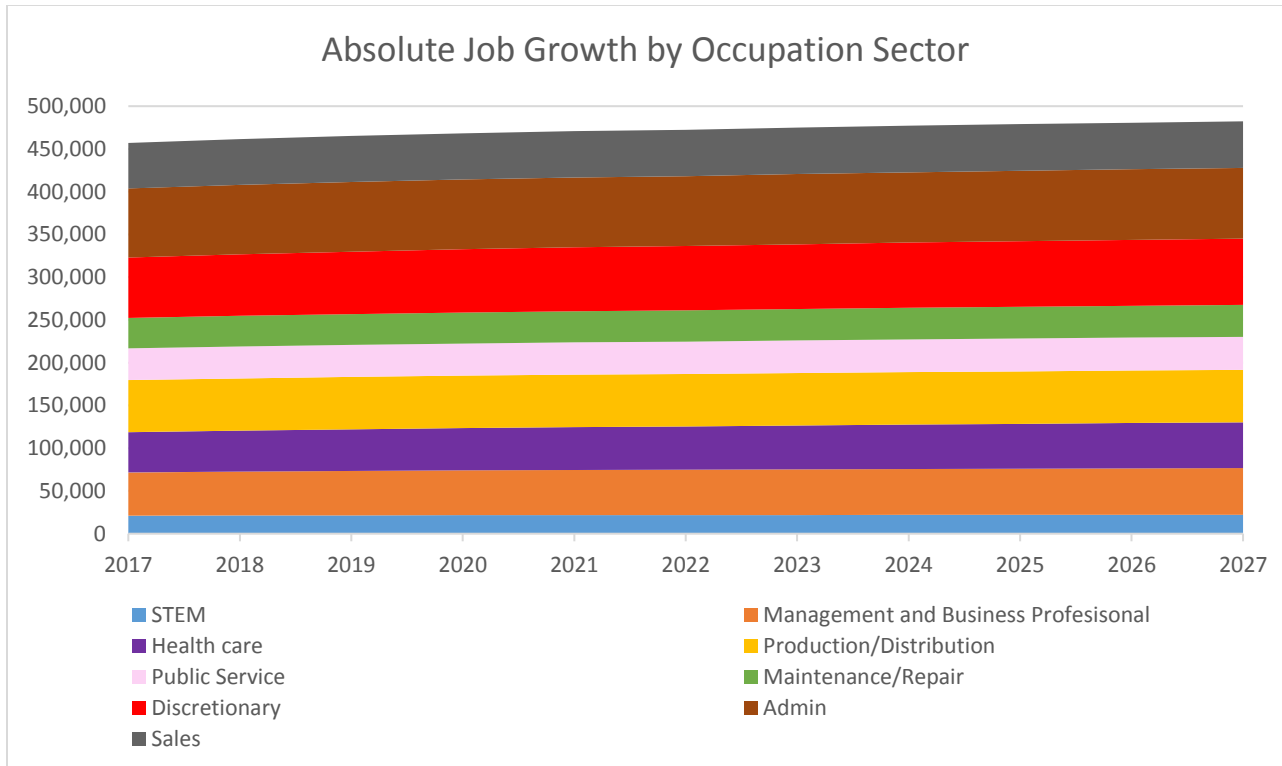
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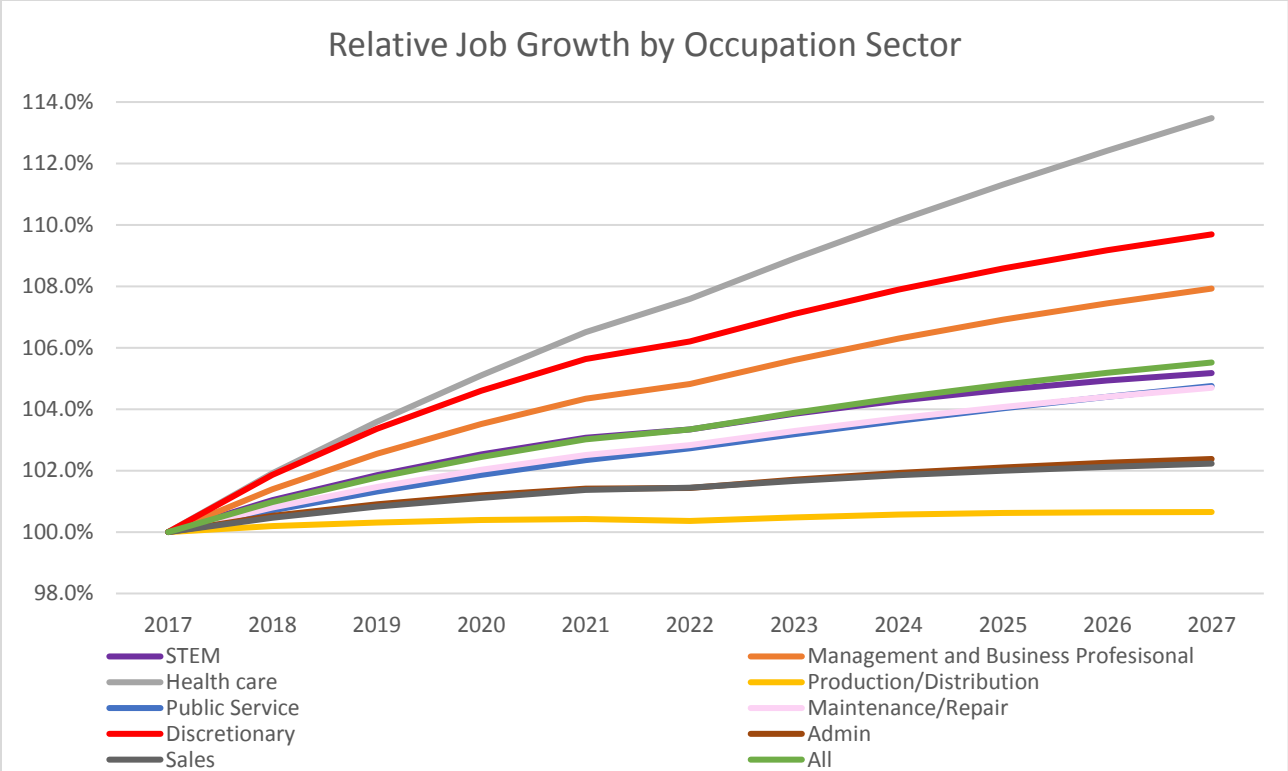
Description	2017	2027	Δ	%Δ
Management Occupations	18,413	20,217	1,804	9.8%
Business and Financial Operations Occupations	27,378	29,188	1,810	6.6%
Computer and Mathematical Occupations	12,986	13,918	932	7.2%
Architecture and Engineering Occupations	5,815	5,797	-18	-0.3%
Life, Physical, and Social Science Occupations	2,276	2,453	177	7.8%
Community and Social Service Occupations	6,444	7,008	564	8.8%
Legal Occupations	4,809	5,206	397	8.3%
Education, Training, and Library Occupations	17,892	18,636	744	4.2%
Arts, Design, Entertainment, Sports, and Media Occupations	7,988	8,281	293	3.7%
Healthcare Practitioners and Technical Occupations	30,596	34,326	3,730	12.2%
Healthcare Support Occupations	16,495	19,111	2,616	15.9%
Protective Service Occupations	9,808	10,149	341	3.5%
Food Preparation and Serving Related Occupations	46,446	51,788	5,342	11.5%
Building and Grounds Cleaning and Maintenance Occupations	17,142	17,798	656	3.8%
Personal Care and Service Occupations	16,213	17,425	1,212	7.5%
Sales and Related Occupations	53,339	54,528	1,189	2.2%
Office and Administrative Support Occupations	80,740	82,661	1,921	2.4%
Farming, Fishing, and Forestry Occupations	501	483	-18	-3.6%
Construction and Extraction Occupations	18,252	19,494	1,242	6.8%
Installation, Maintenance, and Repair Occupations	18,409	19,423	1,014	5.5%
Production Occupations	23,265	22,072	-1,193	-5.1%
Transportation and Material Moving Occupations	18,990	19,357	367	1.9%
Military Occupations	2,853	2,963	110	3.9%
All Jobs	457,050	482,282	25,232	5.5%



### Condensed Trends

Chart Category	SOC Components
STEM	Computer and Mathematical Occupations; Architecture and Engineering Occupations; Life, Physical, and Social Science Occupations
Management and Business Professionals	Management Occupations; Business and Financial Operations Occupations; Legal Occupations
Health care	Healthcare Practitioners and Technical Occupations; Healthcare Support Occupations
Production/Distribution	Farming, Fishing, and Forestry Occupations; Construction and Extraction Occupations; Production Occupations; Transportation and Material Moving Occupations
Public Service	Community and Social Service Occupations; Protective Service Occupations; Military Occupations
Maintenance/Repair	Building and Grounds Cleaning and Maintenance Occupations; Installation, Maintenance, and Repair Occupations
Discretionary	Food Preparation and Serving Related Occupations; Personal Care and Service Occupations; Art, Design, Entertainment, Sports, and Media Occupations
Admin	Office and Administrative Support Occupations
Sales	Sales and Related Occupations





## Conclusion

Several of the fastest growing segments in the economy are high paying and low paying jobs. Pinellas is gaining high paying employment as a regional hub for management and professional employment workers at the top end of the economy. These sectors are almost entirely responsible for target industry employment quickly increasing by 2027. This trend however is counterbalanced by seeing quick growth in low wage economic sectors. Manufacturing, which historically has provided many middle income jobs, is transforming to become a higher wage and higher skill, but lower employment industry. Current manufacturing employees may have to be retrained for higher skill manufacturing jobs in the future as extant lower skill manufacturing jobs are phased out. Another possibility is that current manufacturing employees may move more into industries such as construction and trucking. Workforce development will of course also play a key role in this sector as new employees will be expected to come into the manufacturing environment with a prerequisite amount of skills while employees leaving the less skilled parts of the manufacturing industry will likely need training to move into different fields.

Pinellas County may move towards an export economy with a heavier emphasis on professional services and technology as high skilled manufacturing will still bring money into the region, but may not employ as many workers. Interestingly, even though manufacturing is declining, the general inequality among workforce earnings is not projected to increase very much. This in part suggests that new job gains in fields such as construction and health care will be able to in part offset the loss of certain middle income jobs.

More and more of the Pinellas economy is projected to shift towards the consumer service sector. Many of the faster growing industries chase disposable income from well-heeled professionals, retirees, and tourists. This model cannot directly reflect the growth of tourism in the economy, but indirectly hints at it. The projected quick growth in museum attractions is an example of this trend. The SOC analysis, for example, shows a strong growth for occupations such as hotel desk clerks and “amusement and recreation attendants”. The growing elderly population is reflected in massive projected growth for health care occupations. The restaurant industry of course services all of the groups with income to spare.

One reason for the shift to a more consumer focused economy may also be because of changing demographics. Depending on the estimates used, the current population to employment ratio in Pinellas is roughly 2 to 1. Emsi’s project puts around 25,000 new jobs so the current population would have to increase by roughly 50,000 people to keep that ratio intact. Population forecasts, however tend to show Pinellas gaining that many new residents by the early 2020s. Much of this growth however will occur in older and younger segments of the population as baby boomers retire to the area and millennials have children. More children and retirees, lacking employment and with money to spend, in theory should then prop up the consumer economy and make it a larger piece of the local economic pie.

An ongoing challenge and opportunity for Pinellas will be to promote more business and professional services along with corporate office employment. These sectors are projected to have bullish growth and tend to be firms that can build on their strengths by operating in urban environments. Because redevelopment is paramount in the county, there may be opportunities to expand employment in central business districts such as the downtowns in St Petersburg and Clearwater. By the same token, a challenge will also be to urbanize parts of Pinellas in order to support higher numbers of jobs on the same limited amount of land. “Sprawl repair” and “smart growth” are often politically loaded terms, but in Pinellas County they are the only possibilities for increasing employment and population.

Addressing slower employment growth in Pinellas as opposed to the region will likely require creative strategies. Promoting higher intensity land uses and highlighting the comparative advantage of urban core areas will certainly play a role in this process. At the same time, making “sprawly” areas more economically efficient to fit more jobs per acre is going to be an ongoing challenge that will require significant infill development and, potentially, infrastructure investment. Competing with the urban fringe and green field development where land is cheap and plentiful will make this exceptionally tricky. Communities will have to demonstrate the comparative advantages of densification and urbanization while marketing themselves as an alternative to exurban greenfield development. Public policy will play an important role in this process such as brownfield redevelopment tax credits, zoning regulations, and many potential other solutions could be at play.

# Data Appendix

## Target Industries

Finance/Insurance					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
521110	Monetary Authorities-Central Bank	0	0	0	0%
522210	Credit Card Issuing	56	<10	Insf. Data	Insf. Data
522220	Sales Financing	381	347	-34	-9%
522291	Consumer Lending	41	<10	Insf. Data	Insf. Data
522292	Real Estate Credit	894	290	-604	-68%
522293	International Trade Financing	<10	<10	Insf. Data	Insf. Data
522294	Secondary Market Financing	<10	<10	Insf. Data	Insf. Data
522298	All Other Nondepository Credit Intermediation	191	237	46	24%
522310	Mortgage and Nonmortgage Loan Brokers	512	622	110	21%
522320	Financial Transactions Processing, Reserve, and Clearinghouse Activities	3,408	4,182	774	23%
522390	Other Activities Related to Credit Intermediation	42	<10	Insf. Data	Insf. Data
523110	Investment Banking and Securities Dealing	230	242	12	5%
523120	Securities Brokerage	1,676	1,308	-368	-22%
523130	Commodity Contracts Dealing	<10	<10	Insf. Data	Insf. Data
523140	Commodity Contracts Brokerage	<10	<10	Insf. Data	Insf. Data
523210	Securities and Commodity Exchanges	<10	<10	Insf. Data	Insf. Data
523910	Miscellaneous Intermediation	45	21	-24	-53%
523920	Portfolio Management	474	570	96	20%
523930	Investment Advice	420	369	-51	-12%
523991	Trust, Fiduciary, and Custody Activities	110	133	23	21%
523999	Miscellaneous Financial Investment Activities	83	141	58	70%
524113	Direct Life Insurance Carriers	1,193	1,107	-86	-7%
524114	Direct Health and Medical Insurance Carriers	225	107	-118	-52%
524126	Direct Property and Casualty Insurance Carriers	2,012	2,505	493	25%
524127	Direct Title Insurance Carriers	348	65	-283	-81%

524128	Other Direct Insurance (except Life, Health, and Medical) Carriers	126	165	39	31%
525110	Pension Funds	<10	<10	Insf. Data	Insf. Data
525120	Health and Welfare Funds	<10	<10	Insf. Data	Insf. Data
525190	Other Insurance Funds	0	0	0	0%
525910	Open-End Investment Funds	<10	<10	Insf. Data	Insf. Data
525920	Trusts, Estates, and Agency Accounts	22	26	4	18%
525990	Other Financial Vehicles	15	<10	Insf. Data	Insf. Data
541211	Offices of Certified Public Accountants	1,146	1,131	-15	-1%
Sum		13,675	13,602	-73	-1%

Information Technology					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
423430	Computer and Computer Peripheral Equipment and Software Merchant Wholesalers	2,944	3,122	178	6%
425110	Business to Business Electronic Markets	183	252	69	38%
511210	Software Publishers	539	781	242	45%
517311	Wired Telecommunications Carriers	2,202	1,375	-827	-38%
517919	All Other Telecommunications	50	44	-6	-12%
518210	Data Processing, Hosting, and Related Services	854	954	100	12%
519130	Internet Publishing and Broadcasting and Web Search Portals	155	129	-26	-17%
541430	Graphic Design Services	598	769	171	29%
541511	Custom Computer Programming Services	2,451	2,487	36	1%
541512	Computer Systems Design Services	2,108	2,369	261	12%
541513	Computer Facilities Management Services	46	43	-3	-7%
541519	Other Computer Related Services	284	355	71	25%
811212	Computer and Office Machine Repair and Maintenance	242	294	52	21%
Sum		12,654	12,975	321	3%

Medical/Biotech					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
325411	Medicinal and Botanical Manufacturing	70	99	29	41%

325412	Pharmaceutical Preparation Manufacturing	1,058	1,200	142	13%
325413	In-Vitro Diagnostic Substance Manufacturing	0	0	0	0%
325414	Biological Product (except Diagnostic) Manufacturing	0	0	0	0%
325620	Toilet Preparation Manufacturing	218	271	53	24%
326291	Rubber Product Manufacturing for Mechanical Use	164	95	-69	-42%
326299	All Other Rubber Product Manufacturing	386	369	-17	-4%
334510	Electromedical and Electrotherapeutic Apparatus Manufacturing	129	18	-111	-86%
334514	Totalizing Fluid Meter and Counting Device Manufacturing	<10	<10	Insf. Data	Insf. Data
334516	Analytical Laboratory Instrument Manufacturing	<10	<10	Insf. Data	Insf. Data
334517	Irradiation Apparatus Manufacturing	62	84	22	35%
334519	Other Measuring and Controlling Device Manufacturing	40	16	-24	-60%
339112	Surgical and Medical Instrument Manufacturing	1,588	1,580	-8	-1%
339113	Surgical Appliance and Supplies Manufacturing	376	223	-153	-41%
339114	Dental Equipment and Supplies Manufacturing	50	63	13	26%
339115	Ophthalmic Goods Manufacturing	754	443	-311	-41%
339991	Gasket, Packing, and Sealing Device Manufacturing	16	<10	Insf. Data	Insf. Data
423450	Medical, Dental, and Hospital Equipment and Supplies Merchant Wholesalers	645	573	-72	-11%
423460	Ophthalmic Goods Merchant Wholesalers	115	129	14	12%
541713	Research and Development in Nanotechnology	18	<10	Insf. Data	Insf. Data
541714	Research and Development in Biotechnology (except Nanobiotechnology)	142	231	89	63%
541715	Research and Development in the Physical, Engineering, and Life Sciences (except Nanotechnology and Biotechnology)	327	224	-103	-31%
		6,162	5,624	-538	-9%

Business Services					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
524291	Claims Adjusting	203	159	-44	-22%
524292	Third Party Administration of Insurance and Pension Funds	628	204	-424	-68%
524298	All Other Insurance Related Activities	675	924	249	37%

541191	Title Abstract and Settlement Offices	1,056	1,537	481	46%
541214	Payroll Services	1,495	2,082	587	39%
541219	Other Accounting Services	1,418	1,484	66	5%
541613	Marketing Consulting Services	1,849	2,426	577	31%
541690	Other Scientific and Technical Consulting Services	2,339	3,330	991	42%
541810	Advertising Agencies	447	348	-99	-22%
541820	Public Relations Agencies	79	91	12	15%
551111	Offices of Bank Holding Companies	17	<10	Insf. Data	Insf. Data
551112	Offices of Other Holding Companies	309	343	34	11%
551114	Corporate, Subsidiary, and Regional Managing Offices	13,883	16,831	2,948	21%
561110	Office Administrative Services	1,599	1,615	16	1%
561422	Telemarketing Bureaus and Other Contact Centers	5,111	7,175	2,064	40%
		31,108	38,552	7,444	24%

Defense/Homeland Security					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
325920	Explosives Manufacturing	79	122	43	54%
332993	Ammunition (except Small Arms) Manufacturing	<10	<10	Insf. Data	Insf. Data
335911	Storage Battery Manufacturing	29	11	-18	-62%
336992	Military Armored Vehicle, Tank, and Tank Component Manufacturing	0	0	0	0%
		116	142	26	22%

Aviation/Aerospace					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers	156	158	2	1%
334290	Other Communications Equipment Manufacturing	<10	<10	Insf. Data	Insf. Data
334511	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical System and Instrument Manufacturing	2,404	2,210	-194	-8%
335931	Current-Carrying Wiring Device Manufacturing	338	298	-40	-12%
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	189	162	-27	-14%
336411	Aircraft Manufacturing	0	0	0	0%

336412	Aircraft Engine and Engine Parts Manufacturing	221	273	52	24%
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing	121	55	-66	-55%
336414	Guided Missile and Space Vehicle Manufacturing	45	70	25	56%
336415	Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing	0	0	0	0%
336419	Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing	0	0	0	0%
517410	Satellite Telecommunications	<10	<10	Insf. Data	Insf. Data
		3,477	3,230	-247	-7%

Industrial and Commercial Manufacturing (Not Targeted)					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing	98	81	-17	-17%
332215	Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing	16	13	-3	-19%
332216	Saw Blade and Handtool Manufacturing	26	<10	Insf. Data	Insf. Data
332420	Metal Tank (Heavy Gauge) Manufacturing	18	33	15	83%
332510	Hardware Manufacturing	100	110	10	10%
332613	Spring Manufacturing	<10	<10	Insf. Data	Insf. Data
332618	Other Fabricated Wire Product Manufacturing	<10	<10	Insf. Data	Insf. Data
332710	Machine Shops	744	792	48	6%
332721	Precision Turned Product Manufacturing	181	197	16	9%
332722	Bolt, Nut, Screw, Rivet, and Washer Manufacturing	<10	<10	Insf. Data	Insf. Data
332911	Industrial Valve Manufacturing	<10	<10	Insf. Data	Insf. Data
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing	24	<10	Insf. Data	Insf. Data
333314	Optical Instrument and Lens Manufacturing	122	149	27	22%
333413	Industrial and Commercial Fan and Blower and Air Purification Equipment Manufacturing	<10	<10	Insf. Data	Insf. Data
333414	Heating Equipment (except Warm Air Furnaces) Manufacturing	56	39	-17	-30%
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing	660	757	97	15%
333912	Air and Gas Compressor Manufacturing	<10	<10	Insf. Data	Insf. Data



333914	Measuring, Dispensing, and Other Pumping Equipment Manufacturing	20	26	6	30%
333921	Elevator and Moving Stairway Manufacturing	<10	13	Insf. Data	Insf. Data
333922	Conveyor and Conveying Equipment Manufacturing	<10	<10	Insf. Data	Insf. Data
333923	Overhead Traveling Crane, Hoist, and Monorail System Manufacturing	49	10	-39	-80%
333924	Industrial Truck, Tractor, Trailer, and Stacker Machinery Manufacturing	0	<10	Insf. Data	Insf. Data
333992	Welding and Soldering Equipment Manufacturing	18	29	11	61%
333993	Packaging Machinery Manufacturing	727	856	129	18%
333999	All Other Miscellaneous General Purpose Machinery Manufacturing	55	54	-1	-2%
334513	Instruments and Related Products Manufacturing for Measuring, Displaying, and Controlling Industrial Process Variables	208	198	-10	-5%
335110	Electric Lamp Bulb and Part Manufacturing	48	16	-32	-67%
335121	Residential Electric Lighting Fixture Manufacturing	14	11	-3	-21%
335122	Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing	91	126	35	38%
335129	Other Lighting Equipment Manufacturing	<10	<10	Insf. Data	Insf. Data
335210	Small Electrical Appliance Manufacturing	<10	<10	Insf. Data	Insf. Data
335220	Major Household Appliance Manufacturing	0	0	0	0%
335311	Power, Distribution, and Specialty Transformer Manufacturing	546	665	119	22%
335912	Primary Battery Manufacturing	32	51	19	59%
336612	Boat Building	777	829	52	7%
339910	Jewelry and Silverware Manufacturing	16	10	-6	-38%
339920	Sporting and Athletic Goods Manufacturing	196	152	-44	-22%
339930	Doll, Toy, and Game Manufacturing	<10	<10	Insf. Data	Insf. Data
339940	Office Supplies (except Paper) Manufacturing	347	60	-287	-83%
339950	Sign Manufacturing	535	416	-119	-22%
339992	Musical Instrument Manufacturing	20	28	8	40%
339993	Fastener, Button, Needle, and Pin Manufacturing	<10	<10	Insf. Data	Insf. Data
339994	Broom, Brush, and Mop Manufacturing	21	30	9	43%
339995	Burial Casket Manufacturing	0	0	0	0%
339999	All Other Miscellaneous Manufacturing	241	200	-41	-17%

424610	Plastics Materials and Basic Forms and Shapes Merchant Wholesalers	91	90	-1	-1%
		6,142	6,067	-75	-1%

Microelectronics					
NAICS	Description	2017 Jobs	2027 Jobs	2017 - 2027 Change	2017 - 2027 %
325211	Plastics Material and Resin Manufacturing	11	<10	Insf. Data	Insf. Data
333242	Semiconductor Machinery Manufacturing	106	122	16	15%
334111	Electronic Computer Manufacturing	643	786	143	22%
334112	Computer Storage Device Manufacturing	<10	12	Insf. Data	Insf. Data
334118	Computer Terminal and Other Computer Peripheral Equipment Manufacturing	<10	<10	Insf. Data	Insf. Data
334412	Bare Printed Circuit Board Manufacturing	1,740	1,639	-101	-6%
334413	Semiconductor and Related Device Manufacturing	35	43	8	23%
334416	Capacitor, Resistor, Coil, Transformer, and Other Inductor Manufacturing	127	83	-44	-35%
334417	Electronic Connector Manufacturing	128	168	40	31%
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing	281	337	56	20%
334419	Other Electronic Component Manufacturing	506	478	-28	-6%
334515	Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals	40	40	0	0%
334613	Blank Magnetic and Optical Recording Media Manufacturing	0	0	0	0%
335314	Relay and Industrial Control Manufacturing	243	232	-11	-5%
335921	Fiber Optic Cable Manufacturing	<10	<10	Insf. Data	Insf. Data
335999	All Other Miscellaneous Electrical Equipment and Component Manufacturing	162	102	-60	-37%
336320	Motor Vehicle Electrical and Electronic Equipment Manufacturing	15	<10	Insf. Data	Insf. Data
423690	Other Electronic Parts and Equipment Merchant Wholesalers	691	387	-304	-44%
		4,745	4,436	-309	-7%